A NATURAL RESOURCE SURVEY OF WAGER BAY, NORTHWEST TERRITORIES

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TECHNICAL REPORT SERIES No. 25
Western & Northern Region 1987
Canadian Wildlife Service

Environment Canada
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CANADIAN WILDLIFE SERVICE

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This series may be cited as:

Zoltai, S.C., G.L. Holroyd and G.W. Scotter. 1987. A natural resource survey of Wager Bay, Northwest Territories. Technical Report Series No. 25. Canadian Wildlife Service, Western and Northern Region, Edmonton

Issued under the Authority of the
Minister of Environment
Canadian Wildlife Service

Minister of Supply and Services Canada 1987
Catalogue No. CW69-5/25E
ISBN 0662-15509-2
ISSN 0831-6481

Copies may be obtained from:

Canadian Wildlife Service
Western & Northern Region
Environment Canada
2nd Floor, 4999 - 98 Avenue
Edmonton, Alberta
T6B 2X3

93-00170/

ABSTRACT

In 1978, the Wager Bay area was designated by Parks Canada as a natural area of Canadian significance, worthy of consideration as a National Park site. In August 1984, the Canadian Wildlife Service and Canadian Forestry Service carried out an overview study of the natural resources of the area at the request of Parks Canada. The objectives of the study were:

1. To describe the geology, physical geography, flora, fauna, and human history of the study area.

2. To map and classify the vegetation types and ecological units of the study area.

3. To identify outstanding features of the area that might be critical to the management of a national park that would include all or part of the study area.

This study is based primarily on a review of existing information, and on interpretation of aerial photographs, supported by six days of field work.

This report discusses the climate, hydrology, oceanography, bedrock geology, glacial geology, permafrost and preglacial phenomena, soils, physiology, vegetation, ecological land classification, mammals, birds, fishes, land use, economic and other claims, and human history, of the Wager Bay area. Five ecodistricts are recognized within the Low Arctic Ecoclimate Region. Plant and animal checklists include bryophytes (94 species), lichens (134 species), and vascular plants (113 species), mammals (25 species), birds (69 species), and fishes (17 species).

The general conclusion of the authors is that whilst the individual features of the area are not unique, the area displays a degree of representiveness that may qualify it for a national park. The tidal movements in and out of the bay and the ice-free area at the mouth which attracts marine mammals is special. The highly dissected terraine at Ford Lake and the reversing falls are impressive. A boundary for the proposed park is recommended.

RÉSUMÉ

En 1978, Parcs Canada a désigné la région de la bais Wager zone naturelle, affirmant qu'elle revétait uns importance certaine pour le patrimoine du Canada et quèlle méritait d'âtre proclamée parc national. Au mois d'août 1984, en réponse à une demande de Parcs Canada, le Service canadien de la faune et le Service canadien des forêts ont mené une étude de l'ensemble des ressources naturelles de la région. L'étude avait comme objectifs:

1. De décrire la configuration géologique, la géographie physique, la flore, la faune et l'histoire humaine de la région.

2. De repérer et de classer la végétation et les unités écologiques de la région.

3. D'identifier les traits saillants qui pourraient être essentiels à la gestion d'un parc national composé d'une partie ou de la totalité de la région faisant l'objet de l'étude.

C'est principalement à partir d'informations recueillies au préalable, de photographies aériennes et de six jours de recherches sur le terraine que l'on a réalisé l'étude.

Le climat, l'hydrologie, l'océanographie, la géologie du soubassement et des glaciers, le pergelisol et les phénomènes préglaciaires, les sols, la physiologie, la végétation, la classification écologique des terres, les mammifères, les oiseaux, les poissons, l'utilisation des terres, les revendications économiques et autres, ainsi que l'histoire humaine de la région de la bais Wager ont tous fait l'objet du rapport. L'étude a démontré que le région écoclimatique de l'Arctique inférieure regroupe cinq écodistricts. Entre autre espèces végétales et animales, on y trouve des bryophytes (94 espèces), des lichens (134 espèces) et des plantes vasculaires (113 espèces) ainsi que des mammifères (25 espèces), des oiseaux (69 espèces) et des poissons (17 espèces).

Bien que ses traits particuliers ne soient pas uniques, les auteurs du rapport estiment qua la région est dotée de suffisamment d'attributs typiques pour lui valoir le titre de parc national. La baie se caractérise par ses marées et par la présence de mammifères marins dans les eaux de l'embouchure, qui sont libres de glace. Le terrain fortement accidenté autour du lac Ford et les chutes réversibles sont impressionnants. Les auteurs recommandent la délimitation des frontières du parc proposé.

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1. INTRODUCTION

1.1 Purpose of Study

This study was carried out, at the request of Parks Canada, to briefly summarize the existing knowledge of the natural resources of the Wager Bay area. The study area was designated by Parks Canada in 1978 as a natural area of Canadian significance, worthy of consideration as a National Park (Anon. 1978). In February of 1984, Parks Canada asked the Canadian Wildlife Service and the Canadian Forestry Service to carry out an overview study of the natural resources of this area.

The study area covers approximately 19 500 km^2, excluding the waters of Wager Bay. It lies on the Canadian Shield, within the Central Tundra Natural Region (Region 15; Parks Canada 1972). The area is representative of this region, with some outstanding scenery and marine features.

The objectives of this study are:

1. To describe the geology, physical geography, flora, fauna, and human history of the study area.

2. To map and classify the vegetation types and ecological units of the study area.

3. To identify outstanding features of the area that might be critical to the management of a national park that would include all or part of the study area.

1.2 Scope of Study

This study is based primarily on a review of existing information, and on interpretation of aerial photographs, supported by a brief period of field work.

1.2.1 Field Research

Field research consisted of a helicopter-supported survey of the study area during 5-10 August 1984 (Fig. 1.1). The itinerary included helicopter traverses of the study area. A total of 21 stops were made to examine the vegetation, soil, wildlife, and physiography, and to collect plant and soil samples. This was supplemented by foot traverses in the vicinity of the camp at Tikilak Point.

1.2.2 Office Studies

Office studies consisted of reviewing published literature and unpublished government files, and interviewing persons who have experience in the study area. The collected plant specimens were identified and soil analyses were performed.

Zoltai interpreted the aerial photographs, established ecological land units and broad vegetation types, and mapped the study

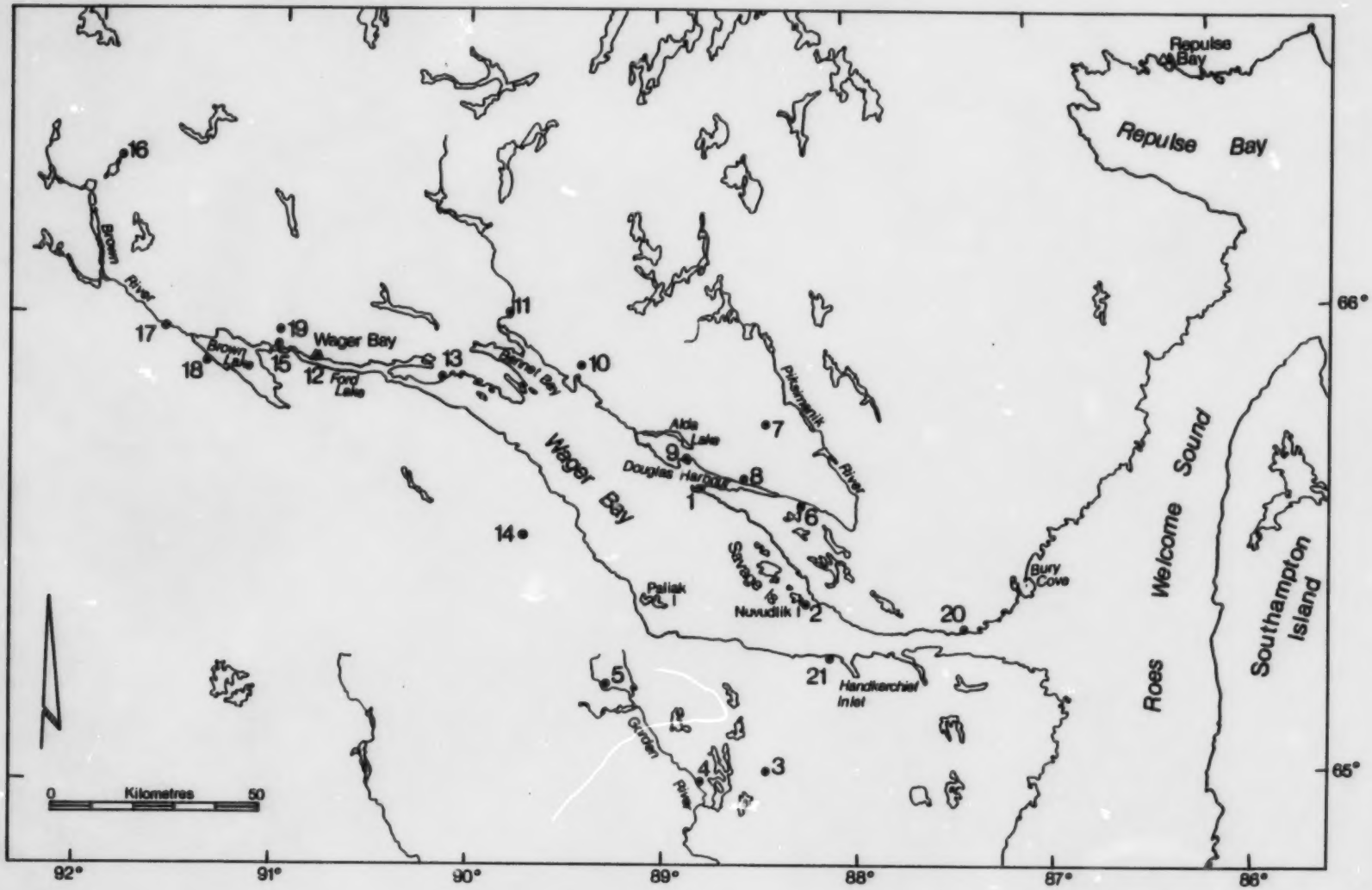

Figure 1.1 Sites visited by the authors between 5 and 10 August 1984.

area at a scale of 1:250,000. He also summarized the information of physiography, geology, and soils, and described the broad vegetation types.

Holroyd researched and summarized the literature on wildlife, human history, hydrology, and climate.

Scotter prepared the species lists for bryophytes, lichens, and vascular plants, and prepared the discussions on the flora. He acted as liaison between the contracting services and Parks Canada.

1.3 Acknowledgements

We wish to acknowledge the assistance of Mr. W.J. Cody (Biosystematics Research Institute, Agriculture Canada, Ottawa), Dr. R.E. Andrus (State University of New York, Binghampton), Dr. W.C. Steere (The New York Botanical Garden, Bronx), and Dr. J.W. Thompson (Department of Botany, University of Wisconsin, Madison) for assistance with the identification of vascular plants, Sphagnaceae, all other bryophytes, and lichens, respectively. Mr. C. Tarnocai (Land Resources Research Institute, Agriculture Canada, Ottawa) provided information on the soils of neighbouring areas.

Mr. M. McComb (Parks Canada) was responsible for field logistics. He arranged for support of the study and assisted with field work.

We thank Gordon R. Burns, Kevin E. Eberhart, Anne Gunn, Kevin McCormick, Shirley McDougall, Frank Miller, Steve Moore, Ian Stirling, Don Thomas, and Ray Wershler for their assistance with literature searches, first drafts of some material and editorial assistance. Our thanks to Susan Popowich, CWS who drafted the figures and Leasa Juba, CWS who typed the manuscript.

2. CLIMATE

There is no weather station located at Wager Bay and little fieldwork has been done in the area; thus, there is a paucity of weather records from the area. The closest weather stations are located at Chesterfield Inlet, Baker Lake, and Coral Harbour (Table 2.1).

Coral Harbour, located on Southampton Island in Hudson Bay, has a climate that is greatly moderated by water. The climates of Chesterfield Inlet and Baker Lake are likely to be much more representative of Wager Bay as these communities are on the mainland and west coast of Hudson Bay. Climatic conditions at Pelly Bay may also be representative of those at Wager Bay as both have prevailing winds from the north and northwest. An average of climate data from Chesterfield Inlet, Baker Lake and Pelly Bay may be representative of the climate for Wager Bay. Additional information regarding precipitation, temperature and winds were extrapolated from isograms from Maxwell (1980) and Crowe (1976). The Sagvagjuac project collected weather data on the northwest coast of Hudson Bay approximately 193 km south of Wager Bay (63°39'N, 90°34'W).

The Wager Bay area is relatively flat and treeless and wind therefore is a significant factor in the local climate. In addition, local valleys can funnel winds to become strong and gusty. Since the prevailing winds come from the north and northwest, Hudson Bay has little moderating effect on the climate of Wager Bay (Table 2.2). The weather received is generally formed over the Gulf of Boothia.

Wager Bay's climate is typical of that found in the barren-grounds of the central Arctic. Winds are strong from fall until spring. These winds keep the ice on Wager Bay free from snow except in some sheltered areas where snow depth has been known to reach 6 m (Parks Canada 1977). Precipitation is light in summer, fall and winter. The majority of the annual precipitation falls in spring when heavy snow and thunderstorms occur. Winters are extremely cold and summers are cool with a frost-free period of approximately 68 days (Newbury et al. N.D.).

Crowe (1976) divided the year into five segments: (1) From December to February, the Wager Bay area as well as the NWT in general experience the coldest weather of the year. The cold is due to the lack of sunshine and continued loss of heat from the ground. Snowfall during this period is minimal. (2) From March to April, temperatures are still cold but they occasionally reach 0°C. Precipitation is negligible. (3) From May to June, melting of snow begins. The mean daily temperature rises to 9°C in June. Heavy snow and thunderstorms are common at this time. (4) July and August (summer) have mean daily temperatures reaching 13 to 15°C. This is the wet time of the year because precipitation falls mostly as rain. (5) In fall, mean daily temperatures drop quickly - to 0°C in September, -8°C in October, and -19°C in November. Ice cover is established by early November.

Table 2.1 Annual and monthly climatic data for Pelly Bay, Chesterfield Inlet and Baker Lake, NWT. ("T" indicates trace amounts of precipitation.)

	Year	J	F	M	A	M	J	J	A	S	O	N	D
Total precipitation (mm)													
Pelly Bay	230.1	2.9	3.4	5.1	14.1	19.6	16.8	36.1	47.0	39.3	28.0	11.0	6.8
Chesterfield Inlet	258.9	7.6	4.6	8.3	12.0	15.1	23.1	41.2	38.7	40.6	33.8	19.9	14.0
Baker Lake	234.6	7.7	4.9	7.6	13.8	12.0	20.9	38.1	37.3	37.0	30.6	16.5	8.2
Mean rainfall (mm)													
Pelly Bay	103.0	0.0	0.0	0.0	0.0	0.9	7.5	33.9	41.1	18.8	0.8	0.0	0.0
Chesterfield Inlet	145.5	0.0	0.0	0.0	0.4	5.2	17.9	40.6	38.6	33.0	9.4	0.4	T
Baker Lake	138.3	0.0	0.0	0.0	0.4	5.9	18.1	38.1	36.9	31.4	7.5	T	T
Mean snowfall (mm)													
Pelly Bay	127.1	2.9	3.4	5.1	14.1	18.6	9.3	2.2	5.9	20.5	27.3	11.0	6.8
Chesterfield Inlet	112.5	7.9	4.5	8.2	11.5	9.6	5.1	0.7	0.2	7.6	24.3	19.1	13.8
Baker Lake	100.0	8.0	5.4	8.3	13.6	6.3	2.8	0.0	0.4	5.9	23.2	17.4	8.7
Mean temperature (°C)													
Pelly Bay	-15.4	-32.4	-32.6	-29.1	-22.3	-11.7	-0.5	6.9	4.2	-2.5	-12.3	-23.5	-28.4
Chesterfield Inlet	-11.6	-31.5	-31.6	-26.5	-16.5	-6.0	2.9	8.9	8.4	2.5	-5.7	-17.4	-26.4
Baker Lake	-12.2	-33.0	-32.6	-27.9	-17.3	-6.4	4.1	11.0	9.7	2.3	-7.7	-20.3	-28.2
Mean maximum temperature (°C)													
Pelly Bay	-12.3	-29.7	-30.4	-27.2	-17.3	-7.0	2.4	9.7	8.2	-1.0	-9.8	-19.8	-25.5
Chesterfield Inlet	-7.9	-27.8	-27.9	-22.2	-11.7	-2.4	6.1	13.1	11.7	4.8	-2.8	-13.6	-22.5
Baker Lake	-8.3	-29.5	-29.2	-23.7	-12.5	-2.6	7.9	16.0	13.8	5.3	-4.4	-16.4	-24.7

Table 2.1 Continued

	Year	J	F	M	A	M	J	J	A	S	O	N	D
Mean minimum temperature (°C)													
Pelly Bay	-18.2	-35.6	-36.3	-33.3	-24.4	-12.7	-2.8	2.9	1.8	-5.2	-15.2	-26.2	-31.6
Chesterfield Inlet	-15.2	-35.2	-35.1	-30.8	-21.2	-9.5	-0.3	4.6	5.0	0.1	-8.6	-21.2	-30.3
Baker Lake	-16.0	-36.4	-36.0	-32.0	-22.1	-10.2	0.2	6.0	5.5	-0.7	-11.0	-24.0	-31.6
Wind speed (km/hr)													
Pelly Bay	---------- not available ----------								24.8	26.0	35.6	25.7	26.8
Chesterfield Inlet	25.7	25.1	27.6	24.8	24.6	24.5	21.7	20.8	22.0	23.4	25.7	32.3	30.8
Baker Lake	27.9	35.3	31.6	30.9	28.7	26.3	24.2	23.5					
Mean daylight hours (hr/min)													
Wager Bay		5/4	8/27	11/47	15/19	18/58	21/59	20/18	16/35	13/4	9/36	6/8	3/4

Table 2.2 Average frost free period for Pelly Bay, Baker Lake and Chesterfield Inlet.

	Years of data	Frost free period (days)	Last frost (Spring)	First frost (Fall)
Pelly Bay	22	16	July 8	July 25
Baker Lake	30	67	June 23	Aug. 30
Chesterfield Inlet	30	67	June 27	Sept. 3

Source: Atmospheric Environment Service (1980).

The data in Table 2.3 was extrapolated from weather maps and tables in Maxwell (1980), Crowe (1976), Allen and McCullough (in prep.), and Dalton (1981). The temperature, precipitation, and wind speed were interpreted from isograms. Daylight hours for Wager Bay were estimated from Maxwell (1980). Numbers in the year column may not be the mean for that climate factor because entries in the table came from a number of sources.

Table 2.3 Climatic data for Wager Bay, NWT. Information from Maxwell (1980), Crowe (1976), Dalton (1981), and Allen and McCullough (in prep.).

	J	F	M	A	M	J	J	A	S	O	N	D	Year
Mean monthly temperature (°C)[1]	-32.5 - -35.0				-7.5(+)		7.5(+)		0.0				-12.5a -11.6b -15(+)c
Mean monthly minimum temperature (°C)[1]	-37.5(+)				-12.5(+)		5.0(-)		-2.5				-10(+)d
Mean monthly maximum temperature (°C)[1]	-30.0(+)				-5.0(+)		10.0(+)		2.5				21.9
Mean wind speed (approx.) (km/hr)[e]	19.4	23.3	18.7 23.5	17.8 21.5	19.9 17.9	16.4 22.9	18.9 21.8	19.8 21.9		16			
Daylight (hrs/day)[1,2]	3			?	16(+)	21	22(+)		15	11(+)			

1. The numbers were obtained from isograms. Not all isograms bisected Wager Bay. Therefore numbers that have a plus or minus sign in brackets following them, were obtained from the closest measurement taken. A plus or minus indicates a slightly warmer/higher or colder/lower reading than the actual figure shown.

2. The information on daylight hours/day were extrapolated from a figure in Maxwell (1980). All numbers are approximations.

3. a,c,d - Maxwell (1980).
   b - Newbury et al. N.D.
   e - lower row from Dalton (1981).

3. HYDROLOGY

3.1 Streams and Standing Water

Two primary rivers flow into Wager Bay, the Brown River and Piksimanik River. To date, no flow data have been recorded for the two rivers. Numerous smaller streams also flow into the Bay. All these water ways contribute freshwater to Wager Bay. A multitude of small lakes and ponds are scattered across the tundra adjacent to Wager Bay. Many of these ponds contain standing water which provides important areas for migrating birds (McCormick et al. 1984).

The freshwater from Ford Lake and the saltwater from Wager Bay mix at the Reversing Falls at the head of Wager Bay (Parks Canada 1978a) (Fig. 3.1). A mixture of marine and freshwater wildlife can be found at the falls.

Figure 3.1 Reversing Falls at the outlet of Ford Lake.

4. OCEANOGRAPHY

4.1 Ice Conditions

Ice starts forming on Wager Bay in mid-October and by early November it is entirely frozen (Brack 1962). On the adjacent tundra, small lakes and ponds are usually entirely frozen by late September (Parks Canada 1977). Ice has been measured up to 1.5 m thick (Blanchet 1930 in Birket-Smith 1933) while the polynya at the mouth remains open all winter. The spring breakup occurs in early July at Wager Bay (Brack 1962) and in early June in the small lakes of the area (Parks Canada 1977). The narrows at each end of Wager Bay hold the ice in the Bay long after the ice in Chesterfield Inlet has flowed into Hudson Bay. Once the ice has left Wager Bay, it remains ice-free until fall freeze-up.

4.2 Tides and Currents

As with temperature and salinity, very little information regarding tides and currents is available. When the tide in Hudson Bay rises, water flows through the narrows into Wager Bay. As the tide begins to rise, a swift current is temporarily created at the narrows making navigation precarious. Approximately one hour later, Ford Lake is affected by the rising tide. The reverse happens 6 hours later: the tide in Hudson Bay falls, water levels in Wager Bay drop and eventually the water level falls in Ford Lake.

The tide in Wager Bay fluctuates between 3 m and 4.5 m. This fluctuation is less than that at Churchill, Manitoba. This is because of the narrow mouth of Wager Bay. Tides in Ford Lake are substantially less again, fluctuating less than 0.9 m.

The surface currents in Wager Bay are generally negligible with the exception of the vicinity of the narrows for a short period during rising and falling tides. The only current with any appreciable force is in Roes Welcome Sound in Hudson Bay (Parks Canada 1977).

5. BEDROCK GEOLOGY

The study area lies entirely within the Canadian Shield, in the Churchill geological province (Stockwell et al. 1969). Geological reconnaissance survey was carried out by Heywood (1967), and more detailed studies of selected portions were made by Henderson et al. (1986). The following descriptions are based on these studies.

5.1 Bedrock

Precambrian rock of Aphlebian (early Proterozoic) age (possibly in part Archaean age) have been moderately to intensively folded, metamorphosed and granitized, and locally intruded by granitic and pegmatitic rocks. The bedrock of the area consists dominantly of varieties of granitic and gneissic rocks. The following groups are most common:

1. Granitoid gneiss rocks are composed essentially of quartz, plagioclase, potassium feldspar, biotite, and hornblende, with muscovite and garnet present in some areas. The dominant colours are shades of pink and grey, and some dark colours where amphibolitic rocks are present. The gneisses are fine to coarse grained.

2. Migmatites consist of varieties of gneissic and schistose rocks interlayered and mixed with granitic material. They often occur together with amphibolite gneiss and hornblende-biotite gneiss.

3. Granodiorite and related rocks consist of granite, granodiorite and quartz-monzonite occurring as intrusive dykes and large plutonic masses. The granodiorite is fine to medium grained, grey to pink, massive to slightly folded. Quartz, plagioclase and microcline with minor amounts of biotite and hornblende are the major constituents.

4. Layered gneiss, paragneiss and schist occur in narrow linear belts. They were probably derived from sedimentary and volcanic rocks. The paragneiss is light to gray, and is composed of quartz, feldspar, biotite, and hornblende and commonly contains red garnets. The layered gneisses are similar to the paragneisses, but are completely recrystallized.

5.2 Economic Geology

Detailed studies were carried out in areas where various anomalies were noted (Henderson et al. 1986). Mineralizations are often associated with magnetic anomalies or shear zones.

1. The Ford Lake batholith, situated north of the lake, consists of monzogranite, syenogranite, and monzogranite/granodiorite. The magnetite content of the monzogranite and granodiorite units accounts for the mapped magnetic anomaly. However, the magnetite content of the rocks seldom exceeds 2%. A strong K-Th-U radiometric anomaly is evident over the entire batholith, but no localized concentrations are evident.

2. The supracrustal belt opposite Paliak Islands on the south shore of Wager Bay consists of rusty-weathering biotite-quartz-feldspar gneiss, granite-tonalite gneiss, migmatic paragneiss, and pegmatite veins. Pyrrhotite (ferrous sulfate) is abundant in most paragneisses. A full evaluation of the economic significance of these deposits is not yet available.

3. The Wager Bay shear zone, along the southern coast of the bay, consists of a central zone of dextral mylonites, a zone to the north composed of banded pink and grey gneisses, and a zone to the south of the mylonites, composed of folded mylonitic gneisses. Although the geological study is not yet complete, no mineralization is evident in this area.

At the present, no mineral deposits of economic significance have been identified in the study area.

6. GLACIAL GEOLOGY

The study area has been glaciated by continental glaciers during the Wisconsin glaciation. However, in this bedrock-dominated area, evidences of ice movements and glacial deposits can be related only to the latest ice advance which molded the surface deposits into their present form.

6.1 Glacial History

Glacier ice advanced from the Hudson Bay basin during the late-Wisconsin, covering the entire area. The ice came to a halt north of the study area at a well-defined morainic system at Chantrey Inlet and the base of Boothia Peninsula. The advance that produced this moraine (part of the Cockburn moraine [Falconer et al. 1965]) has been dated between 8000 - 8500 BP (before present) (Andrews 1970). The well-developed drumlins and crag-and-tail structures north of Wager Bay inlet show a northerly movement of ice (Fig. 6.1). The accumulation of till on the north side of rock hills in crag-and-tail structures leaves no doubt that the ice moved from the south to the north.

Deglaciation occurred a short time later, between 7-8000 BP when the Laurentide ice sheet broke into several residual, local ice masses (Andrews 1970). One of these ice masses was located on the Keewatin Ice Divide (Lee 1959). The north end of this ice divide glacier was located within the study area (Fig. 6.1). This glacier was locally active, as shown by glacial striae radiating to the northwest and southeast of the divide (Craig and Fyles 1960). Later the ice cap became stagnant for some time before it disappeared completely: an ice contact date of 6535 yr BP on southern Southampton Island indicates that glacier ice was still present in the area at that time. The final disappearance of glacier ice from the study area probably occurred around 6500 BP.

During this local ice cap stage, the glacier was stagnant and its mass was reduced by melting, as shown by the presence of eskers. The alignment of eskers is related to the slope of the ice cap: eskers north of Brown Lake are trending northward and those south of Wager Bay inlet are trending to the south and southeast. Eskers are absent from the central area, suggesting that the summit of the ice cap served as a source of sediments to be deposited by eskers further downslope. The eskers south of Wager Bay are often alternating with eroded, outwash-filled valleys, indicating that the ice sheet was discontinuous in the late stages.

The weight of the continental ice sheet depressed the surface of the land. Upon the thinning and final disappearance of the ice, the land has rebounded to near its previous level. The sea had inundated the depressed land, creating marine features that were later elevated well above sea level. Estimates are that the Wager Bay area has rebounded some 190 m since 8000 BP (Dyke 1974). It is estimated that the land may rise somewhat during the next 4000 years, amounting to less than 48 m at Southampton Island and less in the Wager Bay area (Dyke 1974).

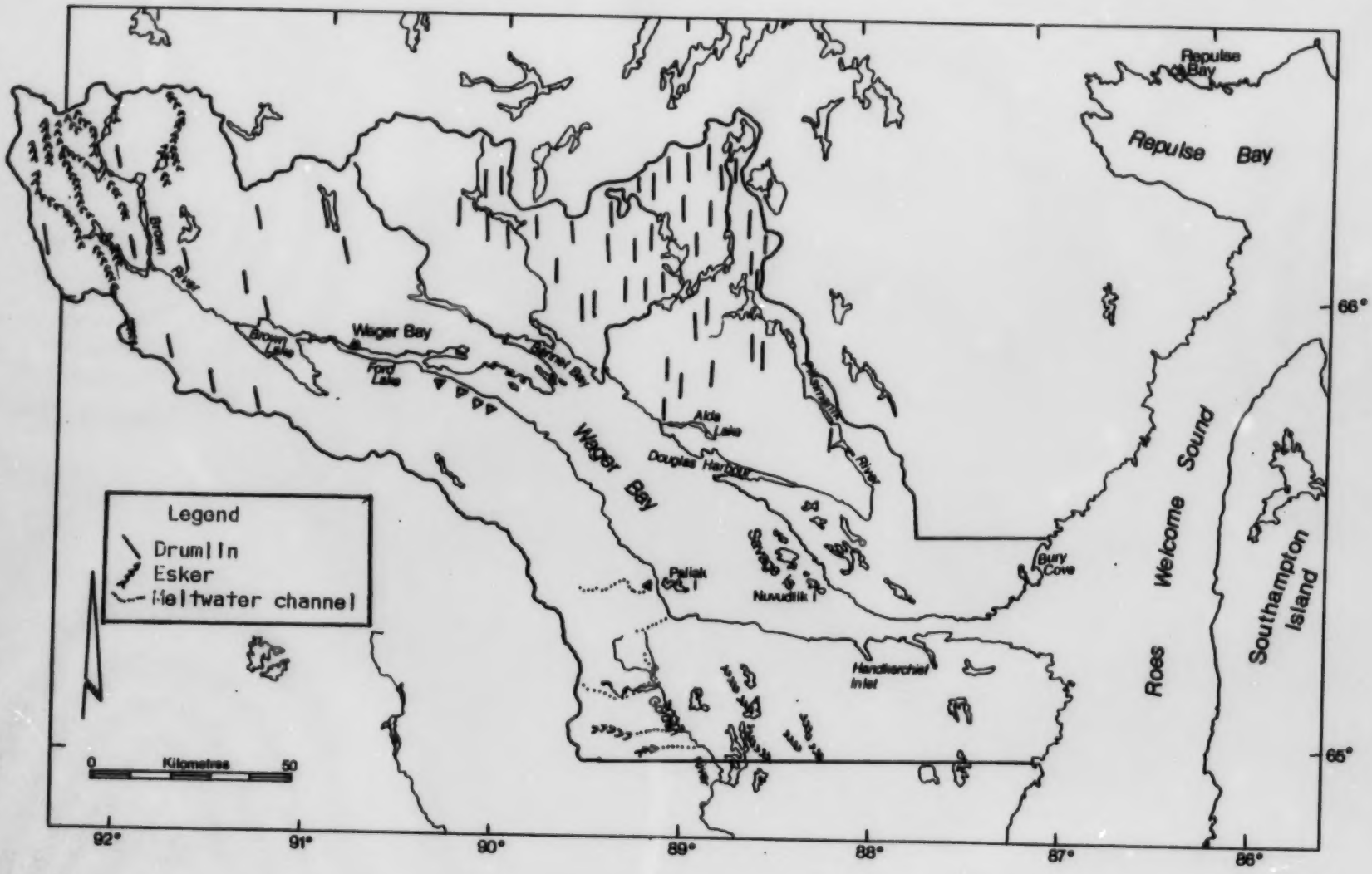

Figure 6.1 Glacial features indicating direction of ice movement in the Wager Bay area.

The post-glacial rebound began before the study area was completely free of ice. Thus marine intrusion took place after the surface had partially recovered from the maximum depression. The calculated rebound since the final disappearance of ice (about 6500 BP) is about 115 m (Dyke 1974). The limit of maximum marine submergence around Wager Bay has been etablished at about 400 ft (122 m, Bird 1954). Craig (1961) found marine shells at an elevation of 56 m ASL north of Ford Lake. The Macoma community represented by the shells occurs in the area at present in shallow waters to depths of 50 m (Craig 1961).

During the present study, it was found that severely wave-washed bedrock, representing the littoral zone of marine inundation, occurs below the 130 m contour around Wager Bay inlet. Perched deltas occur between the 60-90 m contours in the western part of Wager Bay inlet, at the end of valleys containing glaciofluvial deposits. Apparently, the sea level has dropped to these elevations when glacial meltwaters were still produced by the waning ice cap.

6.2 Surficial Materials

Glaciation and subsequent marine inundation influenced the distribution of surface materials. Glaciers eroded the bedrock and unconsolidated sediments, and spread the debris across the landscape as till in a blanket of varying thickness. Glacial meltwaters, either under the ice or on land, deposited extensive eskers and outwash plains composed of sand and gravel. The main effect of marine inundation was the denudation of bedrock surfaces of all unconsolidated materials by wave action. Marine sediments are extremely rare, occurring only in small pockets. Postglacial deposition of peat was limited by the severe climate to a few, thin deposits.

6.2.1 Glacial Till

The till consists of a mixture of sandy materials, stones, and boulders (Thomas 1977). The fine matrix (<2 mm) is composed of sand (70-80%), some silt (15-20%), and clay (5-10%). The amount of stone is variable, but it often reaches 25% by weight. The till consists of fragmented granitic rocks of local origin.

The thickness of till is extremely variable. It is entirely lacking on the extensive bedrock outcrops (Fig. 6.2). Deep till (>3 m) occurs in many valleys and in drumlins. Thin till (<1 m) veneer is widespread, especially in the uplands south of Wager Bay. The till veneer is often underlain by frost-shattered bedrock, making the distinction between till and local bedrock very difficult.

6.2.2 Glaciofluvial Deposits

Glaciofluvial materials are found in eskers, narrow, sinuous gravelly ridges that often stretch for several kilometres (Fig. 6.3), often flanked by outwash sand plains. Glacial meltwater channels are marked by stratified sand and gravel deposits that occur in a broad valley

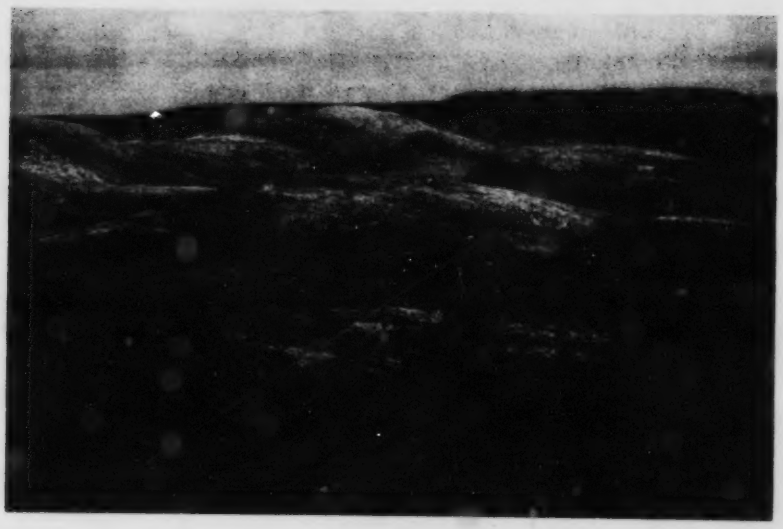

Figure 6.2 Thin, discontinuous till on bedrock ridges.

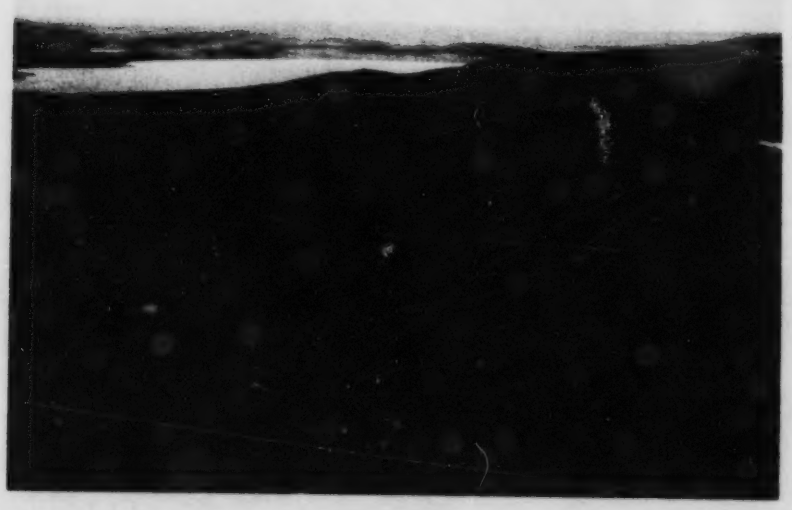

Figure 6.3 An esker ridge.

now occupied by a small stream. Other stratified sand and gravel deposits occur in deltas deposited at the mouths of glacial meltwaters, now raised well above the sea level.

Glaciofluvial deposits are usually stratified sand, with gravels common in eskers (Fig. 6.3). The fine matrix is 95-100% sand. Mineralogically it is composed of fragmented granitic rocks common to the area.

6.2.3 Marine Sediments

Only one marine deposit was found, near the mouth of Wager Bay. It occurred in a small basin, perched about 45 m above the sea among bedrock hills. The material was stonefree silt (63%), fine sand (21%), and some clay (16%). It was non-calcareous, and was probably derived from local rock-flour.

6.2.4 Organic Deposits

Organic deposits occur in localized areas of wet depressions. Most display a polygonal pattern, caused by ice wedge development. The ice wedges displace the peaty surface soil as they grow, forming a low dam around each polygon. These low centres may contain shallow water and support peat-forming vegetation. Nevertheless, peat formation is very slow due to the harsh climate: the thickness of peat is usually less than 40 cm. The peat is usually moderately decomposed, with relatively high inorganic ash content (25%).

7. PERMAFROST AND PERIGLACIAL PHENOMENA

The severe climate prevalent in the area creates conditions peculiar to polar regions. The ground remains below the freezing point of water through the year, as only a thin surface layer thaws every summer. Frost action causes the churning of soil and the sorting of stones, often resulting in the formation of patterned ground.

7.1 Permafrost and Active Layer

Permafrost occurs under all land surfaces, even in bedrock. The ice content of the permafrost is variable: it may be highly icy under poorly drained depressions, or it may be free of ice as in bedrock. The thickness of the perennially frozen layer is not known, but it probably reaches several hundreds of metres.

The surface layer that thaws and re-freezes every year is the active layer. Its thickness varies; generally it is the thickest in bedrock, or in dry, coarse-grained soils (1 m). It is about 65-80 cm thick in well-drained sandy till. The active layer is the thinnest in poorly drained, peaty soils at about 40 cm.

7.2 Periglacial Phenomena

The presence of permafrost, the intense frost action and repeated freeze-thaw cycles cause the soil to crack, heave or to sort the stones according to size. These result in a variety of surface forms, collectively known as patterned terrain.

7.2.1 Polygons

The intensely cold winter temperatures cause the ground to shrink and crack. When viewed from above, the cracks form a polygonal pattern, with an average diameter of 15 m. Moisture seeping into the crack freezes, and eventually ice wedges are formed in the polygonal pattern initiated by the cracks. Polygons in the study area are found either in wet lowlands or in sandy, gravelly plains.

Polygons occur most frequently in wet, depressional basins in the study area. They consist of low ridges that form the polygon pattern, and a low center. The low center is created by ridges of displaced soil and peat, caused by the growth of ice wedges in the ground. The centers usually contain shallow pools of water (Fig. 7.1). The thickness of peat is usually less than 30 cm. The active layer is about 70 cm thick in the center, but only 25 cm in the ridges.

Polygonal pattern can be found on some sand and gravel plains. Here, the trenches are straight, linear depressions that intersect to form the polygonal pattern. Ice wedges underlie the trenches. The polygon centers are usually level, without any ridges along the trenches, as found in lowland polygons (Fig. 7.2).

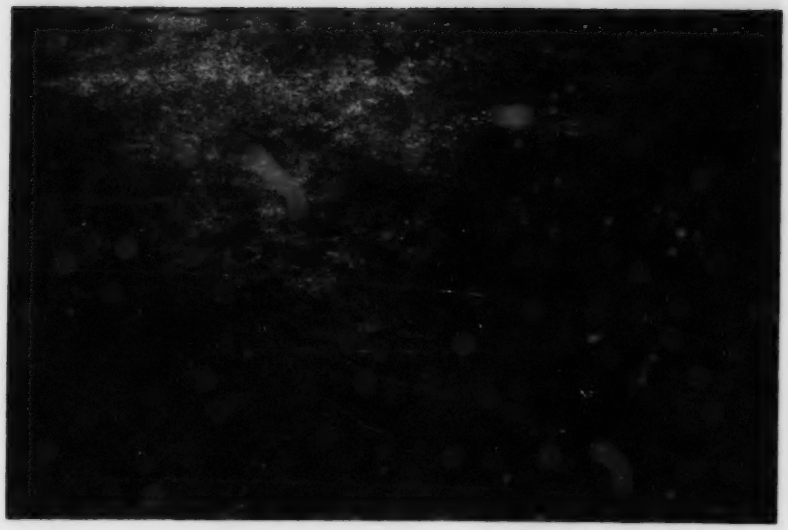

Figure 7.1 Low center polygons.

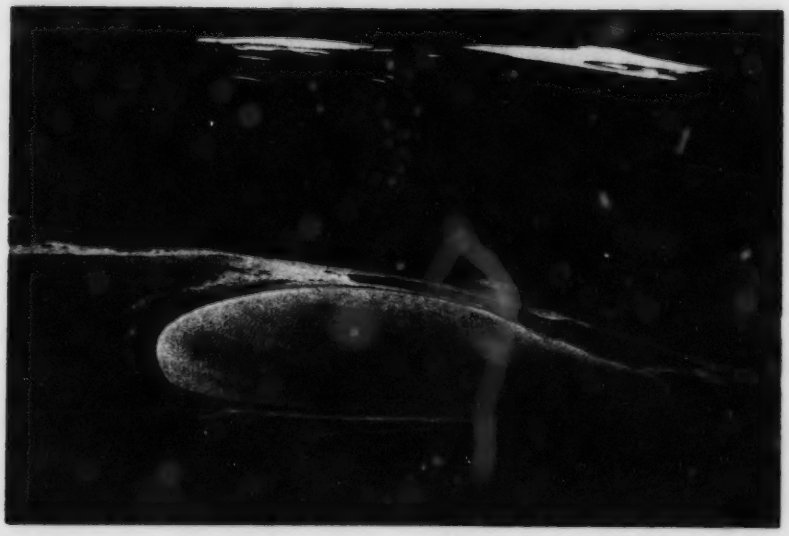

Figure 7.2 Polygonal pattern in sand (foreground) and sorted stripes (background).

7.2.2 Sorted Stripes

Frequent freeze-thaw cycles cause the heaving of stones and rocks to the surface. In addition, the rocks are moved outward from a central point. On slopes the rocks are aligned in long stripes down the slope, due to frost action. In the study area, the stripes are wide (up to 3 m) and are slightly lower than the inter-stripe area. Because of this, the stripes serve as runoff channels from the hill. Since they are wetter than the inter-stripe area, different vegetation develops on them, making them conspicuous from the air (Fig. 7.2).

7.2.3 Sorted Circles

Sorting of rocks by freeze-thaw cycles often results in circular patterns, in which the rocks form a net and the finer textured soils are concentrated in circular patches (Fig. 7.3). The patches are circular in relatively flat areas, having an average diameter of 1.5 m. On slight slopes, they may be elongated in a downslope direction.

7.2.4 Sorted Nets

Sorting of rocks by frost action sometimes results in the formation of irregular patterns: sorted nets. Depending on the amount of stones available, the nets may be contiguous, or may appear as irregular patches among the finer-textured soil materials (Fig. 7.4). The finer materials are usually sorted into somewhat higher mounds than the rocks.

7.2.5 Nonsorted Circles

In less stony areas, such as marine sediments and on some tills, frost action forms circular patches that may be flat or slightly mounded (mudboils, Zoltai and Tarnocai 1981). The mounding is generally lower than 20 cm and their average diameter is 1.5 m. The mudboils are oversaturated with water in the spring, but they dry out during the summer. In the oversaturated condition they are highly susceptible to disturbance and can be liquified by vibration (Tarnocai 1977).

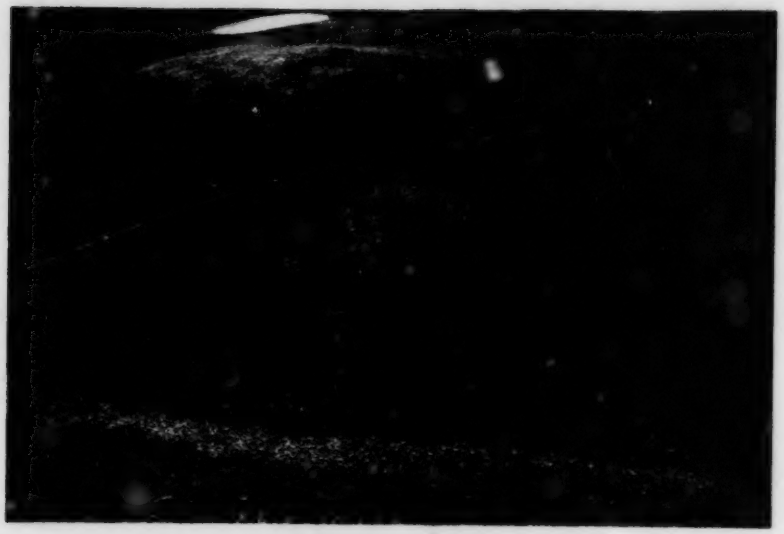

Figure 7.3 Sorted circles on a lower slope.

Figure 7.4 Sorted nets on a gentle slope. The stony patches are about 1 m long.

8. SOILS

Soil profile development is influenced by the parent material, drainage conditions, vegetation, periglacial action, and climate. In the study area, the parent materials are relatively uniform: glacial till and glaciofluvial sand derived from local granitic bedrock constitute most of the unconsolidated surface deposits. Decaying vegetation adds humic material to the soil, and promotes the formation of soil horizons. However, the generally coarse texture of the soil, the sparse vegetation cover, and the short elapsed time since glaciation result in a weak soil horizon development.

Soil classification is based on soil profile development, using the terminology of the Canadian Soil Survey Committee (1978). All soils in the study area belong to the Cryosolic Order, as permafrost occurs within one metre of the surface everywhere. Turbic and Static Cryosols were commonly encountered. These soils resemble those described by Tarnocai (1977) from the area immediately west of the study area.

8.1 Static Cryosols

Soils of the Static Cryosol Great Group are characterized by the presence of permafrost within one metre of the surface and by the lack of indication of cryoturbation (frost churning). Such soils are found on well drained sites of sand and gravel.

Dystric Static Cryosols, occurring on well drained sand materials, consist of a thin (up to 5 cm thick) surface A_e horizon. This is underlain by a rust-colored B_m horizon that may be up to 40 cm deep. Permafrost occurs 80-90 cm below the surface.

8.2 Turbic Cryosol

Turbic Cryosols are characterized by evidences of frost churning. Such indications are streaks of buried organic material, displaced soil horizons, and sorted or oriented stones either in the soil or on the surface. On the well drained sites there may be a weak B horizon (Orthic Turbic Cryosol), but on actively cryoturbed soil this is usually missing. Permafrost is generally 65-80 cm below the surface.

Gleisolic Turbic Cryosols are formed on imperfectly to poorly drained soils. These are characterized by a thick (up to 10 cm) well decomposed A_h layer, which is usually subducted into the subsoil by cryoturbation. The permafrost table is usually close to the surface (40-50 cm). The subsoil above the permafrost table is gleied, as manifested by grey colours or rust-coloured mottles.

9. PHYSIOGRAPHY

The study area lies within the Kazan Region of the Canadian Shield. It is entirely within the Wager Plateau, a plateau that rises up to an elevation of 600 m ASL (Bostock 1970). The area shows the features of a peneplain: a general lack of individual peaks or mountain ranges, manifested by an even skyline (Fig. 9.1). The Wager Plateau attains its highest elevation at the west end of Wager Bay, and descends both towards the east and west.

The drainage system is dominated by a major fault zone, now occupied by Wager Bay and Brown Lake. Streams develop an often tortuous course, winding their way between bedrock hills. A number of small waterfalls were noted, usually developed at faults (Fig. 9.2). Lakes of various sizes are numerous, often connected by short streams.

The study area can be subdivided into five distinctive areas on the basis of physiography and surface materials (Fig. 9.3).

9.1 Ford Lake Uplands

This area is dominated by deeply dissected, steep hills that rise to 500 m ASL, with local relative elevation differences of up to 250 m (Fig. 9.4).

The uplands are dominantly exposed bedrock, often covered by frost-shattered rubble. The valleys have deep soils and are well vegetated, in sharp contrast with the rocky ridges.

9.2 Wager Plateau Hills

South of Wager Bay the land surface rises steeply to the level of Wager Plateau along a fault that forms the south shore of Brown Lake and Wager Bay (Fig. 9.5). The land surface is hilly and moderately broken, with relative elevation differences of 150 m between the rocky ridges and the sandy valleys (Fig. 9.6).

9.3 Wager Plateau Plain

Much of the study area consists of undulating terrain of low hills and plains where the relative elevation differences seldom exceed 60 m. The hills are bare bedrock that may have a thin till cover, but slopes and plains have a thicker till cover (Fig. 9.7).

9.4 Drumlinized Plain

Numerous drumlins (low, elongated, streamlined hills) occur in a plain, interspersed with low bedrock outcrops. In most of the area, however, the till cover is thick and well vegetated. Elevation differences are generally less than 30 m.

Figure 9.1 The peneplain at Wager Bay, showing an even skyline.

Figure 9.2 Small stream with a waterfall over a fault.

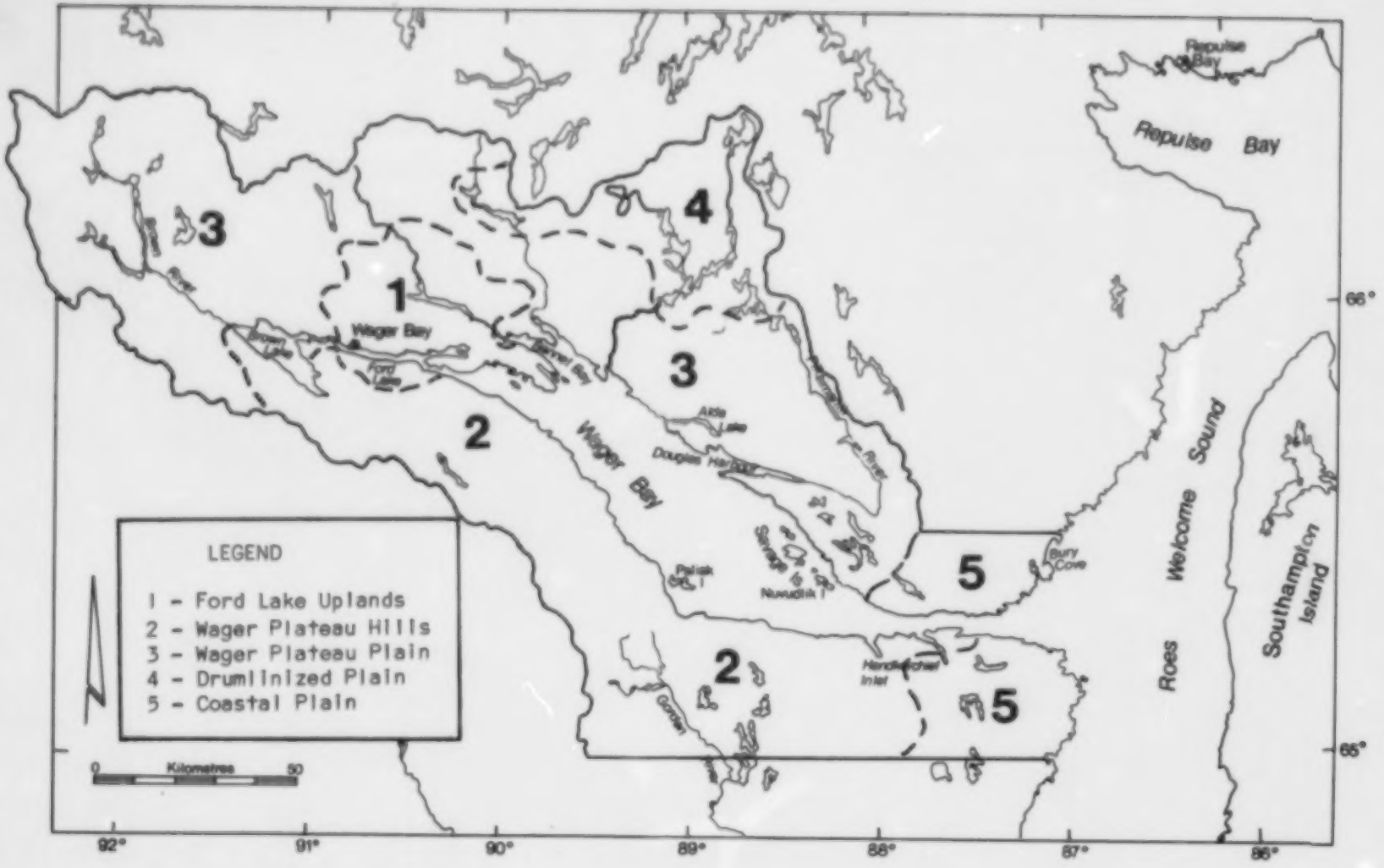

Figure ... Physiographic subdivisions of the Wager Bay area.

Figure 9.4 Rugged bedrock-controlled topography in the Ford Lake area.

Figure 9.5 Steep cliff along a fault.

Figure 9.6 Rugged bedrock topography south of Wager Bay.

Figure 9.7 Undulating, bedrock-controlled terrain of the Wager Plateau.

9.5 Coastal Plain

This area is characterized by extensive bare bedrock areas. The surface is gently undulating (Fig. 9.8), with some low bedrock knobs. The entire area has very little cover of till or other unconsolidated material, as it was subjected to severe erosion by the receding marine shoreline (Fig. 9.9). Relative elevation differences are seldom more than 30 m.

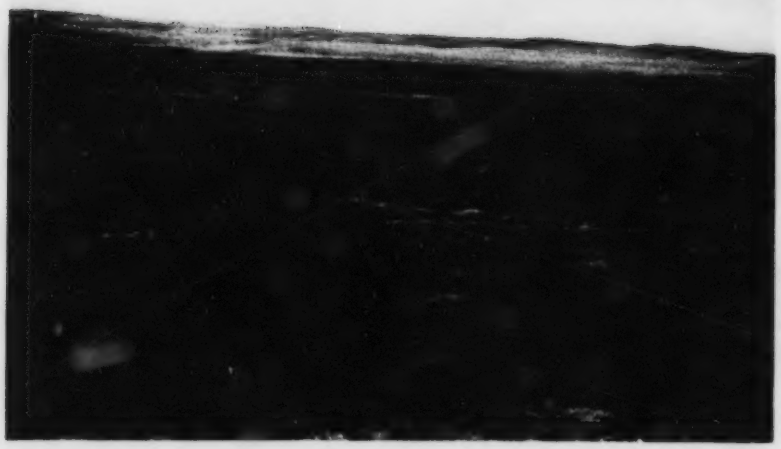

Figure 9.8 Flat bedrock plain along the Hudson Bay coast.

Figure 9.9 Severely wave-eroded bedrock shores of Wager Bay.

10. VEGETATION

The vegetation was assessed by using the existing literature, aerial photographs, visits to selected sites and by extensive collection of plants. The vegetation of the area is typical of the Low Arctic tundra. Variations in vegetation are mainly due to local soil moisture conditions, and to the prevalent soil materials (especially bedrock). Some climatic differences occur between the uplands and coastal lowlands (up to 500 m elevation difference), but vegetation differences were not obvious at the broad level of survey.

10.1 Floristics

Large collections of bryophytes, lichens, and vascular plants were made during the field inventory. The flora of the Wager Bay region is not well known. The results of those collections follow.

10.1.1 Bryophytes

Thirteen taxa of Hepaticae and 81 taxa of Musci were collected from the Wager Bay region (Appendix 1). According to Ireland et al. (1980) Sphagnum orientale, Blindia acuta, Cnestrum alpestre, Bryum knowltonii, and Ulota crispa were recorded in the Northwest Territories for the first time. Sphagnum orientale, although not listed by Ireland et al. (1980), was recently recorded in the Bathurst Inlet region. Several other collections provide new distribution data for northern Canada. For example, the collection of Sphagnum arcticum is only the second in Canada, the other being for the Aklavik region (Flatberg and Frisvoll 1984). Many of the other collections of bryophytes represent the first records for the Wager Bay region.

There are few published reports on bryophytes of the Wager Bay region. The closest published records from the Thelon River (Scotter 1966, Holmen and Scotter 1967) and the Keewatin District (Zoltai and Johnson 1978).

10.1.2 Lichens

The field inventory in the Wager Bay region resulted in the collection of 134 taxa of lichens (Appendix 2). A number of those species are particularly interesting. For example:

Candelariella athallina - a very rare species.

Lecanora kariana - the only previous report is from the Reindeer Preserve in the western Arctic.

Psora rubiformis - an excellent record near the centre of its range.

Stereocaulon coniophyllum - a major southern range extension from Alaska, Baffin Island and Bylot Island (Thomson 1984).

There have been no previous reports on lichens from the Wager Bay region. Scotter and Thomson (1966) and Zoltai and Johnson (1978) have published on lichens in the Keewatin District and Thomson (1984) mapped macrolichen distribution for American arctic lichens. Thomson's second book on microlichens of the Arctic will include the taxa in Appendix 2.

10.1.3 Vascular Plants

The vascular plant flora of the Wager Bay region is relatively unknown, except along the coastal area. Porsild and Cody (1980) have reported on vascular plants from the continental Northwest Territories. From the distribution maps in their book, all 113 vascular plants (Appendix 3) collected from that region could be expected there, except for Pleuropogon sabinei which is new to the continental Northwest Territories. Thompson (1980) provided additional information on the flora and vegetation of the Boothia Peninsula and northern Keewatin and Jaques (1982) gave similar data for the Roche Bay area, Melville Peninsula.

10.2 Broad Vegetation Types

Differences in vegetation within the study area are influenced mainly by the parent soil material (texture, thickness over bedrock) and the moisture regime of the different sites. The resulting communities are far too numerous to be adequately studied during a brief reconnaissance survey. However, it was found that broad vegetation types are often consistently associated with specific terrain types that can be readily recognized in the field.

During the brief reconnaissance survey broad vegetation types were identified and these were later used to map the vegetation of the study area at a scale of 1:250,000 (in pocket). The scale of mapping and the scant field control dictated that the vegetation types be broad, recognizable on air photos, and mappable at the given scale. The resulting vegetation types are based on the physiognomy of the floral assemblages, rather than on floristics. This gave a workable tool for an initial indication of vegetation distribution in the study area.

No vegetation studies have been previously conducted in the study area. The vegetation of some neighbouring areas have been described (Larsen 1972, Edlund 1977, Rowe et al. 1977, Zoltai and Johnson 1977, Thompson 1980, Jaques 1982). These have been consulted to help characterize the broad vegetation types.

10.2.1 Rock - Lichen Type (1 on attached map)

This type of vegetation occurs on bedrock outcrops and on excessively bouldery terrain. It is composed mainly of saxicolous lichens, dominantly crustose lichens, but umbilicate lichens often cover some rock surfaces. Mosses (mostly Rhacomitrium lanuginosum) cover some bedrock outcrops. Cassiope tetragona may grow between boulders or in cracks.

10.2.2 Low Shrub - Heath Type (2 on attached map)

This vegetation type is found extensively on well-drained positions on glacial till. It is dominated by dwarf, ground-hugging plants of Dryas integrifolia, with Cassiope tetragona and Ledum decumbens (Fig. 10.1). Other species are graminoids, such as Hierochloe alpina and Carex nardina. Saxicolous lichens, such as Thamnolia vermicularis, Alectoria spp., Cetraria nivalis, C. cucullata are also common.

10.2.3 Low Shrub - Moss Type (3 on attached map)

This vegetation type is common on moderately-drained lower slopes. It is dominated by the dwarf shrub species, Dryas integrifolia (Fig. 10.2), with some Cassiope tetragona, Ledum decumbens, and Salix herbacea. The mosses Rhacomitrium lanuginosum, Tomenthypnum nitens, and Hylocomium splendens are abundant (Fig. 10.3). The lichens Cetraria nivalis, and C. cucullata are locally present.

10.2.4 Sedge Meadow Type (5 on attached map)

This vegetation type is common on poorly-drained areas, both on mineral soil and on thin organic soils. It consists dominantly of Carex aquatilis, C. membranacea, Eriophorum angustifolium, E. vaginatum ssp. spissum, and E. scheuchzeri (Fig. 10.4). It may contain some Salix arctica, Saxifraga hirculus, and Melandrium apetalum.

10.2.5 Legume - Grass Type (6 on attached map)

This vegetation type occurs on dry, sandy-gravelly areas. It is characterized by dark coloured terricolous lichens, such as Alectoria ochroleuca and Cornicularia divergens. Graminoids, mainly Hierochloe alpina and Luzula confusa may grow in patches. Legumes, such as Oxytropis spp. and Astragalus alpinus also occur sparingly.

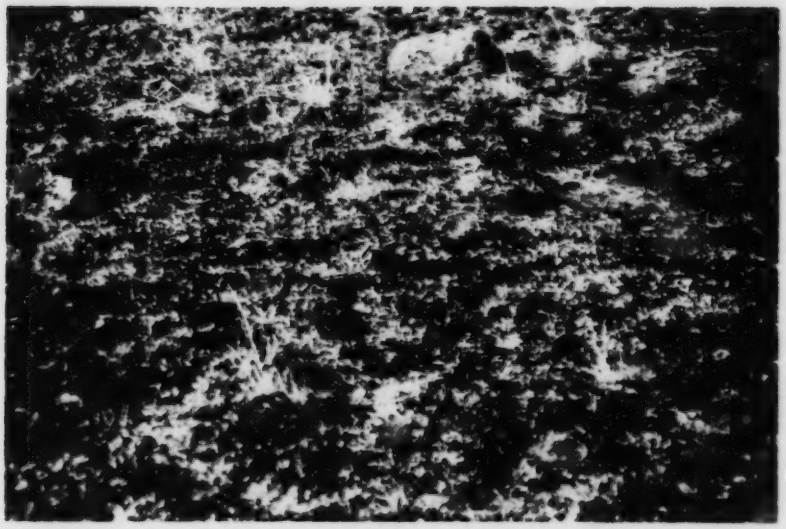

Figure 10.1 Low shrub - Heath vegetation on till upland.

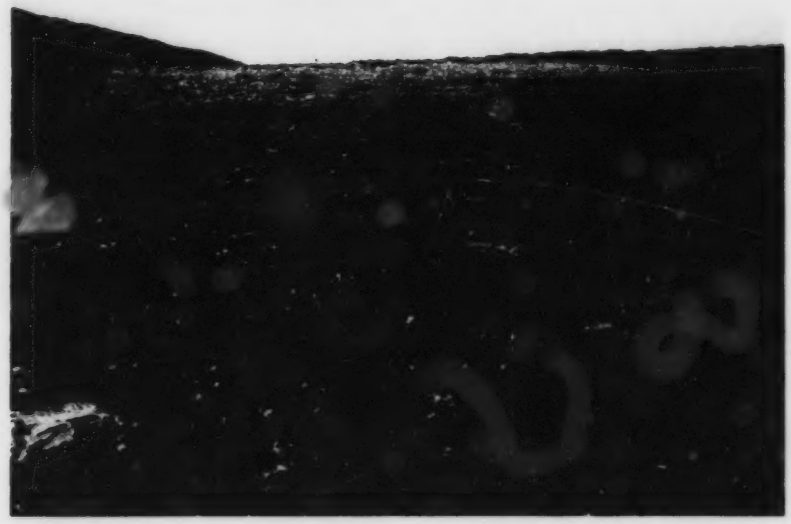

Figure 10.2 A Low Shrub - Moss vegetation type with abundant flowering Dryas.

Figure 10.3 Low shrub - Moss vegetation type with abundant mosses and lichens.

Figure 10.4 A typical wet sedge meadow.

11. ECOLOGICAL LAND CLASSIFICATION

Ecological (bio-physical) land classification of the study area was completed, using the principles outlined by Lacate (1969). The terminology of this approach has been revised by the Canada Committee on Ecological Land Classification. The new terminology will be used throughout, with the equivalents of the original terminology also indicated.

Ecological land classification is an evaluation of elements of the physical environment in terms of their importance to the biological components. Thus the various physical components, such as climate, soil texture, soil mineralogy, internal drainage, and slope are evaluated with regard to their influence on plant growth and distribution, and indirectly, on animal populations. During this process groups of physical factors that have similar infuence on the living environment are grouped into classes. During the mapping process, areas that are alike are delineated.

In this classification the ecoclimatic regions (land regions) are the broadest subdivisions, based mainly on the effect of climate on the biosphere. The next level is the ecodistrict (land district) occurring within each ecoregion, where the physiography and soil materials that influence vegetation growth and distribution are used as distinguishing criteria. At the next lower level, the mapping level at 1:250,000 scale, ecosections (land systems) are recognized on the basis of differences in soil and landform that affect the biological components.

11.1 Ecoclimatic Regions and Ecodistricts

The study area is located entirely within the Low Arctic Ecoclimatic Region (Zoltai and Strong, In press). On normal sites there is a continuous cover of vegetation, composed of dwarf birch, willows, northern Labrador tea, and dryads. Cryosolic soils dominate. The climate is characterized by cool, moist summers that last for about four months, and by long, extremely cold winters. Frost is common during the summer. The total annual precipitation is less than 300 mm (Zoltai and Strong, In press).

The ecoclimatic region has been subdivided into ecodistricts on the basis of physiography, soil and vegetation distribution. There are five ecodistricts (Fig. 11.1):

The Ford Lake Uplands Ecodistrict is a strongly dissected area, dominated by bedrock outcrops. Deeper till, and hence more vegetation, occurs in some valleys.

The Wager Plateau Hills Ecodistrict is characterized by hilly bedrock-dominated terrain. Bedrock outcrops are common, sometimes covered by a thin till veneer. Thicker till and some glaciofluvial deposits occur in some valleys. Continuous vegetation occurs on the deeper till materials in the valleys.

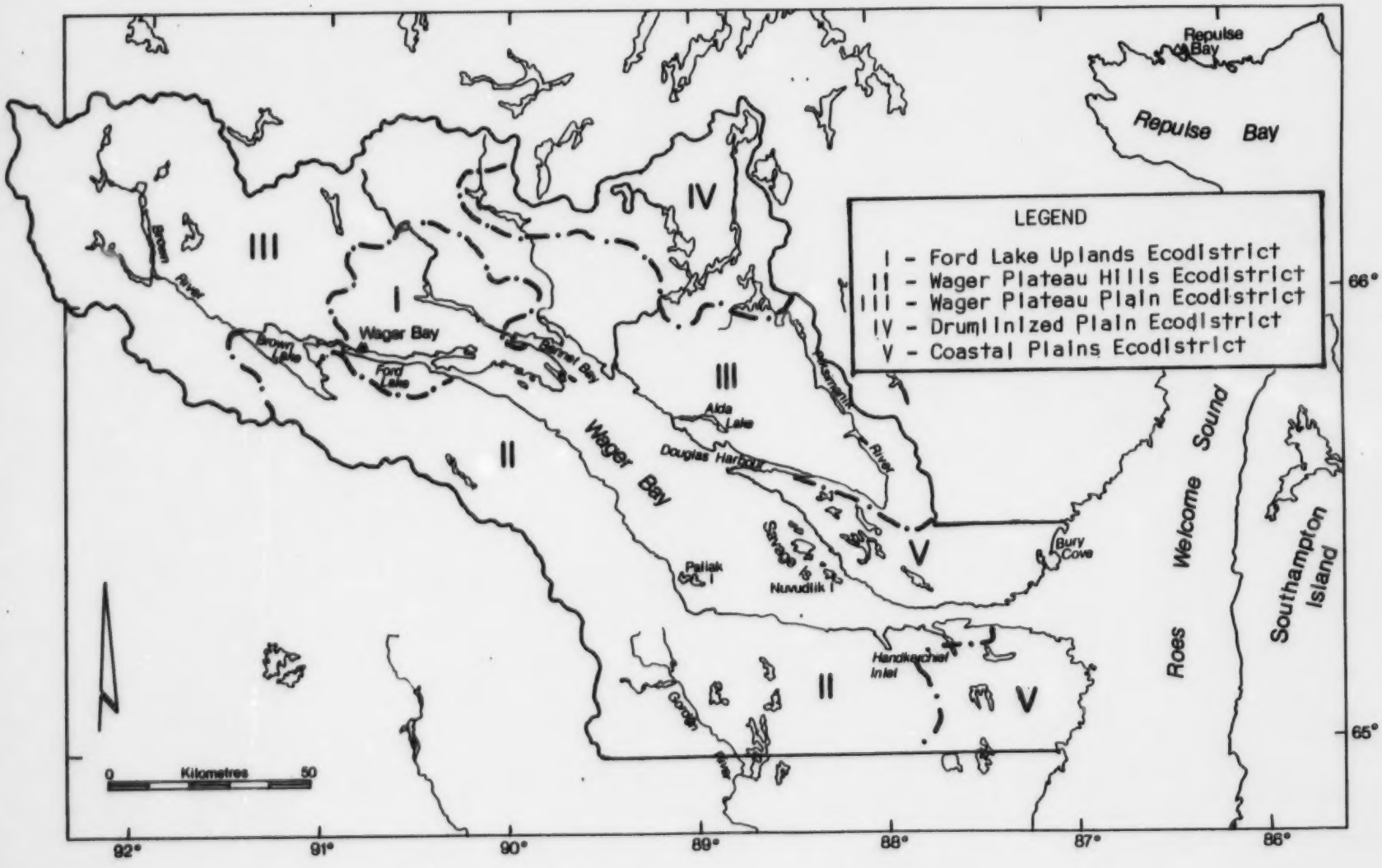

Figure 11.1 Map of Ecodistricts in the Wager Bay area

The Wager Plateau Plain Ecodistrict is an undulating bedrock-controlled plain. The ridges may be exposed bedrock, or they may be covered by a thin till veneer. Glaciofluvial deposits are common in the western part of the district. A relatively large proportion of the area has deeper soil where the vegetation cover is nearly continuous.

In the Drumlinized Plain Ecodistrict, drumlins composed of thick till, dominate the landscape, but some bedrock outcrops do occur. Vegetation covers most of the landscape, and small wetlands occur in some river valleys.

The Coastal Plains Ecodistrict consists of a gently rolling plain, dominated by extensive bedrock outcrops, with only local thin till veneer. The area is generally low-lying and there is a high incidence of fog. The vegetation is scant on bedrock and on boulders.

11.2 Ecosections

Ecosections were determined on the basis of broad relief, and the texture and thickness of soil materials. The relief classes have significance in indicating the presence of anomalous local climates, as well as the distribution of soil moisture. The textural classes have an important bearing on the moisture and nutrient availability to plants, as well as on the thickness of the active layer. The thickness of unconsolidated soil materials over bedrock incluence the rooting depth and moisture content of the soil. The resulting broad vegetation classes were a further criterion for the delineation of the ecosections.

The ecosections of the Wager Bay area are basically simple, as both the mineralogy and texture of the till are uniform. The main differences are in surface relief, and in the proportions of exposed bedrock, till veneer, and thicker till. Glaciofluvial sands occur in some areas in mappable extent.

The scale of mapping dictates that few uniform ecosections will be identified on the map. In fact, most are patterns of several soil and vegetation types. Even if different ecosections could be recognized in the field and on air photos, these could not always be mapped because of their small extent. As a general rule, if an included different material or vegetation was less than 20% of the area, it was not indicated in the symbol. In a complex symbol, the type in the first position is more prevalent than those in subsequent positions. The map of ecosections and broad vegetation types is enclosed with this report (in pocket).

Ecosections are intended to characterize the area in broad terms, showing the main relief, soil and vegetation features. This level of detail is perhaps sufficient at a very broad scale of planning, but not at the detailed, management planning level. Planning for park development must be based on a more detailed map of biophysical features of the area to take advantage of local features that could not be mapped at the broad

scale. Such detailed mapping should be an integral part of the planning and development process.

11.3 Terrain Sensitivity

Terrain sensitivity refers to the susceptibility of the terrain to damage as a result of disturbance. The most sensitive terrain will show much reaction to the impact (thermal collapse, slumping, erosion, etc.) even after relatively low levels of disturbance, whilst the least sensitive terrain will withstand severe disturbance.

Two interrelated kinds of sensitivity can be recognized. One refers to the terrain, where ice content of the soil, soil texture, and slope predispose the terrain to damage. A second aspect is the ability of the vegetation to absorb the effects of disturbance and become re-established.

The susceptibility of the terrain to disturbance is relatively low. This can be attributed to the generally coarse texture of the soil, which results in low ice content of the near-surface permafrost. However, some soils are particularly sensitive to vibration shock which will render them fluid, resulting in massive soil flows (Zoltai and Woo 1978). The following sensitive terrain types have been recognized:

Terrain with mudboils - presence of mudboils indicates shock-sensitive soil that may liquefy if vibrated by traffic or foot travel.

Polygonal terrain - presence of ice wedges indicates potential for subsidence upon disturbance.

Sedge meadow - wet areas are highly susceptible to rutting by vehicles, vegetation (Type 5) or by foot traffic.

Seepage slopes - roads following the contour would intercept drainage, inducing eventual slope failure.

The sensitivity of vegetation to disturbance is high on wet sites, as trampling would cause severe damage to plants. Dry sites, including bare bedrock are not sensitive to foot traffic and are suitable for road location.

Management considerations

1. Building of facilities on susceptible terrain must be avoided.

2. Foot traffic (such as near campsites) should be concentrated on non-sensitive sites.

3. Traversing well-vegetated seepage slopes should be avoided, by directing traffic to the ridges.

12. MAMMALS

The mammal fauna of Wager Bay is relatively diverse with 25 species recorded from the area. Since the study area is part of mainland Canada, it has more terrestrial mammals than the arctic islands. The salt water bay attracts some marine mammals.

Of the 17 terrestrial mammals, Barren-ground Caribou are the most obvious and abundant of the large mammals. Wolves and Polar Bear were next in abundance among the large mammals. There is no quantitative data on the relative abundance of any small mammals and our trapping effort resulted in no captures. Seals were the most common of the eight marine mammals. Bearded Seals were easily separated from the other seals but the identification of the smaller seals was difficult from the air.

All of the species reported at Bylot Island , an area previously surveyed as a potential national park, were present at Wager Bay with the exception of Hooded Seal (Zoltai et al. 1983). Seven species occurred at Wager Bay but were absent at Bylot Island. Three of these were small mammals and the other four are rare or recorded only once or twice: Grizzly Bear, Lynx, Moose, and Muskox. Caribou were more abundant at Wager Bay and whales less so than at Bylot Island. The mammal fauna of the two areas is very similar in species composition although the relative abundance varies between the two sites.

Barren-ground Shrew

This species (Sorex ugyunak) was originally classified as a subspecies of S. cinereus. The new taxonomy is after van Zyll de Jong (1983). No mention of the Barren-ground Shrew was found in the Wager Bay literature but both Banfield (1974) and van Zyll de Jong (1983) show Wager Bay lying within the range of the species. Macpherson (1968) lists this animal as present in the arctic-alpine life zone on the west side of Hudson Bay. It also occurs in the Repulse Bay area (Sutton and Hamilton 1932). The shrew is active all year and is probably most common in low, wet, sedge-grass meadows and thickets of dwarf shrubbery (van Zyll de Jong 1983). Few predators will eat this animal because of its unsavory taste.

Arctic Hare

A few observations of hares have been recorded at Wager Bay and area. Furnell (1981) saw them between 23 August and 13 September 1978. Droppings were found at only one site, W13, in August 1984. The Arctic Hare was found all over adjacent Southampton Island, but it was notably more common in the higher, eastern part of the island (Sutton and Hamilton 1932).

Freeman (1976) states that the Arctic Hare is common along the west coast of Hudson Bay. Arctic Hare numbers fluctuate greatly and it is possible that populations were at a cyclic low when fieldwork was done at Wager Bay. Banfield (1974) states that the species frequents rough Precambrian hillsides in winter where winds keep the ground snow-free. The Arctic Hare is an important link in the food chain of the north. It is prey to both avian and mammalian predators such as the Snowy Owl and the Arctic Fox.

Arctic Ground Squirrel

Burrows of this species were found on the north side of Wager Bay at sites W1, W6, W11, W13 and W15 between 7 and 10 August 1984. Arctic Ground Squirrels were seen only at sites W11 (2) and W13 (1). One ground squirrel was collected here by the Thule expedition (Degerbol and Freuchen 1935).

Calef and Heard (1979) found this ground squirrel to be abundant in the Wager Bay area. Furnell (1981) observed this species on the higher ground on the north shore of the bay. Arctic Ground Squirrels have been reported from Repulse Bay but are absent on Southampton Island (Sutton and Hamilton 1932).

Permafrost limits the distribution of this species. It occurs on sandy or gravelly hillsides where good drainage prevents permafrost from occurring near the surface (Banfield 1974). The most common habitats include eskers, moraines, river banks, lake shores, and sand banks. This colonial animal hibernates for about seven months of the year (approximately early October to early May). In the summer it is an important food source for avian predators of the region as well as the Ermine, Arctic Fox, Wolf, and bears.

Northern Red-backed Vole

There is no reference to this species in the Wager Bay literature but Banfield (1974) includes the area in the range of this vole. Hanson (1952) and Macpherson (1968) both state that the Red-backed Vole is present in the barren lands on the west coast of Hudson Bay. This species is usually closely associated with northern shrub vegetation but does occur in rock fields and rock talus in the absence of shrubs (Banfield 1974). This vole is an important food item to many northern furbearers.

Brown Lemming

The Brown Lemming is common throughout the central tundra region and occurs in suitable habitat around Wager Bay (Bodden 1980, Dept. of Indian and Northern Affairs 1983a). On nearby Southampton Island it was common (Sutton and Hamilton 1932), but less so than the Collared Lemming (Parker 1974). Populations of this colonial species regularly fluctuate with numbers peaking every 2-5 years (Banfield 1974). It is most commonly found on wet tundra swales with grasses and sedges but also occurs on grassy slopes and along streambanks and lakeshores. Lemmings are a very important element in the ecology of the region. They are prey for many predators and often their abundance determines that of their predators. The most important predators of the lemming are the Snowy Owl, Glaucous Gull, Raven, Gyrfalcon, Rough-legged Hawk, Parasitic and Long-tailed Jaegars, Ermine, Arctic and Red Foxes, Wolf, and Wolverine (Banfield 1974).

Collared Lemming

The Collared Lemming is common throughout the central tundra region but usually less so than the Brown Lemming (Bodden 1980). It occurs in suitable habitat around Wager Bay (Dept. of Indian and Northern Affairs 1983a). Parker (1974) found it to be abundant on Southampton Island during 1970 fieldwork and absent in 1971 due to a major population crash. Populations fluctuate in 2-5 year cycles (Banfield 1974). Collared Lemmings like higher, drier, rockier tundra than the Brown Lemming. This important prey species is preyed upon by the same predators as the Brown Lemming.

White Whale (Beluga)

The beluga is numerous in Wager Bay during the summer. Pods of approximately 150 individuals were observed near the Paliak Islands in July 1975 and August 1976 (Parks Canada 1977). Calves were seen with the first group. Furnell (1981) observed belugas in Wager Bay between 23 August and 13 September 1978. None were seen in August 1984.

Belugas seem to favour the south side of the bay. Transient Inuit have harvested them in late summer for many years. There is no direct evidence of calving within the bay. White Whales seek out the river estuaries in summer (Sergeant and Brodie 1975). It is probable that belugas winter in open water regions of Roes Welcome Sound (Mansfield et al. 1975a, Sergeant and Brodie 1975). Sergeant and Brodie (1975) estimated a population of approximately 10,000 in western Hudson Bay.

Belugas were harvested in Wager Bay by Repulse Bay hunters between 1921 and 1962 (Freeman 1976). RCMP game reports between 1962 and 1971 show that Repulse Bay residents used 116 belugas in two years (Smith and Taylor 1977). Between 1950 and 1960 the harvest in the eastern Arctic was 1,000 per year and in the western Arctic was 200 per year (Sergeant 1962).

Narwhal

The sighting of two Narwhals near Reversing Falls on 5 August 1976 was the first recorded observation in Wager Bay (Parks Canada 1977), however, more were seen in August 1984. They are regularly observed in deep water around Southampton Island and Repulse Bay (Sutton and Hamilton 1932, Mansfield et al. 1975b). The Narwhal has been hunted by Repulse Bay natives for many years (Parks Canada 1977).

RCMP game reports at Repulse Bay for the years 1962-71 show a total of 40 Narwhals harvested from two years recorded (Smith and Taylor 1977). Mansfield et al. (1975b) gives a conservative estimate of 10,000 for the Canadian Arctic. It is possible that with more fieldwork Narwhals will be found to be of regular occurrence in Wager Bay.

Bowhead Whale

No bowheads have been reported in Wager Bay in this century, although 10 to 20 are seen each year in the Repulse Bay, Roes Welcome Sound and Southampton Island areas (Sutton and Hamilton 1932, Sergeant 1968, Parks Canada 1977). They are classified as endangered by the Committee on the Status of Endangered Wildlife in Canada and the Inuit have not killed any in the area in recent years (Mansfield 1971). Large numbers were observed in Wager Bay in 1742 (Middleton 1743 in Parks Canada 1977). Commercial whaling operations until 1915 hunted the bowhead to near extinction (Mansfield 1971, Ross 1974). The Hudson Bay population now numbers less than 100 individuals (Leatherwood and Reeves 1983).

Wolf

Large numbers of Wolves occur in the Wager Bay area (Parks Canada 1978a,b, Bodden 1980). Furnell (1981) sighted Wolves at Wager Bay in 1978. Wolves were seen on 9 August 1984 at two locations: one Wolf between sites W15 and W16 and three between W16 and W17. In addition, tracks were observed at sites W5, W11, and W13. Sutton and Hamilton (1932) reported an apparent population decline before they arrived at Southampton Island where they described Wolves as being "rather rare". The Thule expedition reported "The interior of Wager Inlet is said to be a place where large numbers of Wolves assemble in mating time" (Degerbol and Freuchen 1935, p. 120).

Wolves are wide ranging and are usually associated with Caribou herds (Banfield 1974, Bodden 1980). Wolves are opportunistic hunters and feed on most species of small mammals as well as Caribou (Banfield 1974).

Arctic Fox

There are large numbers of Arctic Fox in the Wager Bay region (Parks Canada 1978a,b, Bodden 1980). RCMP game reports for the region show high numbers trapped on Southampton Island (Parker 1974, Smith and Taylor 1977) and in the Repulse Bay area. In the 1930s, Repulse Bay natives hunted this fox at Wager Bay (Dept. of Indian and Northern Affairs 1983a). Furnell (1981) observed Arctic Foxes at Wager Bay during 1978 fieldwork.

Observations from August 1984 included five fox skulls at site W2 presumably from native trapping efforts, tracks and a den at site W13, a den at site W1 and a scat probably of this species at site W1. These sign of fox activity could be from Arctic Fox or Red Fox.

These animals den in well-drained, upland sites that are usually south-facing (Banfield 1974). They undergo dramatic population fluctuations with 3-5 year peaks, usually crashing one year after their main prey species, the lemming. These opportunistic hunters will also feed on other small mammals, birds, eggs, and carrion.

Red Fox

The Red Fox is common in the Wager Bay area (Parks Canada 1978a,b, Bodden 1980). It is present on Southampton Island (Sutton and Hamilton 1932) and is uncommon in the Perry River area (Aleksiuk 1964). The Red Fox is not dependent upon any particular prey species and eats whatever is available, including vegetation (Banfield 1974). This animal, the larger of the two foxes, is extending its range in the Canadian Arctic.

Grizzly Bear

Lyon (1824) in Harington et al. (1962) was told by local Inuit that "both black and white bears" were numerous in the Wager Bay region. This and other native references seem to indicate that the range of the barren-ground Grizzly Bear has shrunk since there are no recent records in the area. There are two records of single grizzlies near Southampton Island in the last 40 years: one in October 1948 and the other in October 1950 (Harington et al. 1962). The nearest area with significant numbers of barren-ground grizzlies is in the Thelon Game Sanctuary, 500 km west-southwest of Wager Bay.

Polar Bear

Wager Bay is an important summering area for Polar Bears. During fieldwork in August 1984, 19 Polar Bears were seen primarily along the shoreline of Wager Bay (Fig. 12.1). Two sightings were of a female with two cubs of the year and one of these was about 25 km from saltwater near the Gordon River. In addition, five Polar Bears were observed along either side of Douglas Harbour on 5 August 1984. Some of these five could be the same bears recorded on Figure 12.1.

Donaldson et al. (1981) observed that the number of bears increased from June to September as the bay became ice-free. It is probable that bears migrate to the bay in early spring from areas such as Southampton Island to hunt seals (Parks Canada 1977). From observations in 1976, Donaldson et al. (1980) estimated that the summer population at Wager Bay was at least 54 and that the density was about 85 bears per 1000 km of shoreline. Furnell (1981) had a smaller study area in 1978 and estimated the summer population of Polar Bears at 130. Polar Bears are seldom seen in Wager Bay in the winter. Ayotte (1980) and Davidge (1980) found dens on the leeward sides of hills and in ravines where snow accumulated in long, deep drifts on the south shore of Wager Bay and predicted that there were dens in the Douglas Harbour area. Southampton Island is the region's major denning area and is the centre of abundance for the species in the eastern Canadian Arctic. Goodman (1980) considered Wager Bay to be a sensitive management area for the Polar Bear. Harington (1964) estimated 6,000-7,000 bears in the Canadian Arctic. Seals are usually common where bears are found. In addition to seals, these solitary bears will also eat many other items including carrion (especially beached whales), birds, small mammals, and vegetation (Banfield 1974).

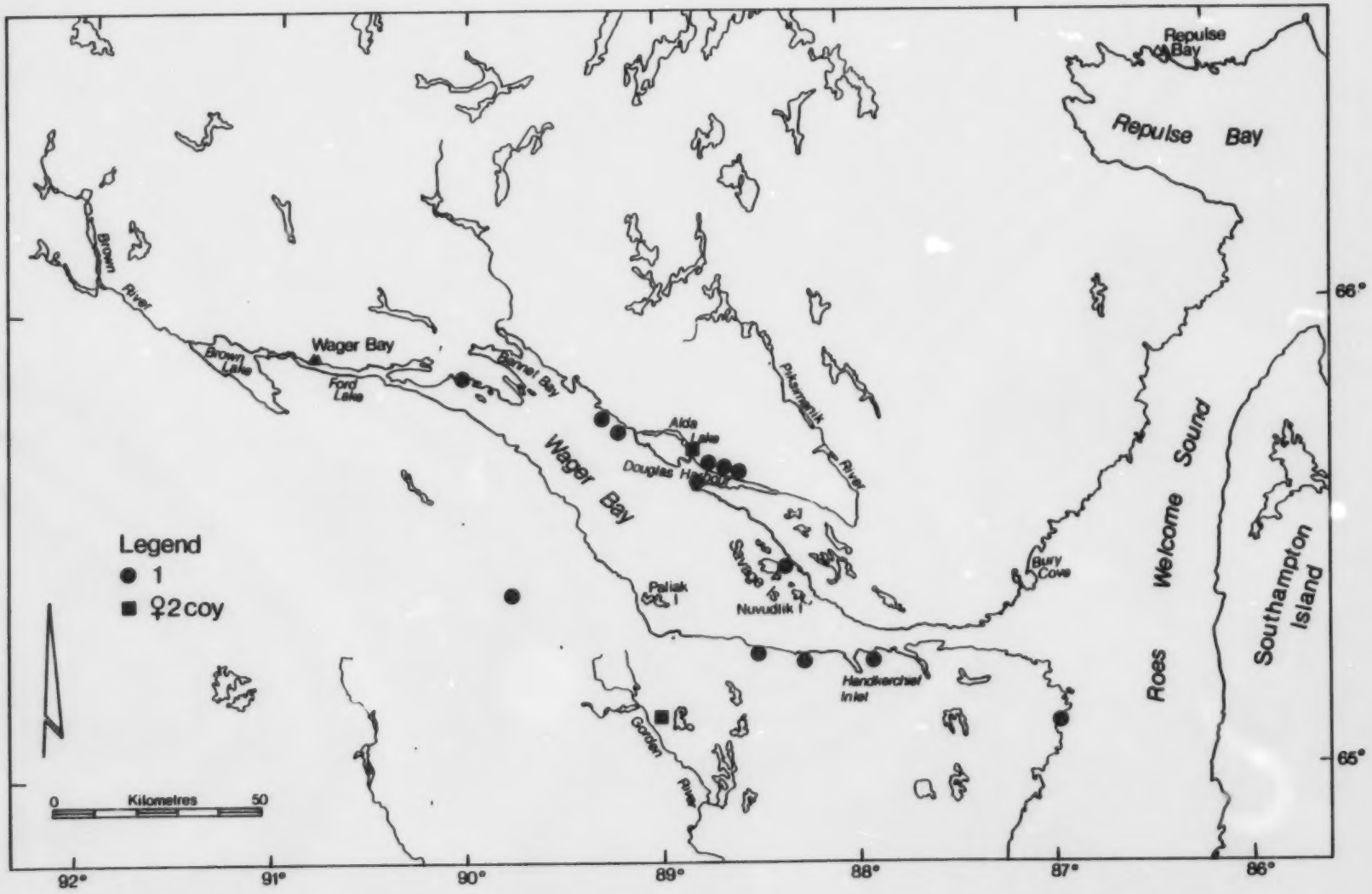

Figure 12.1 Polar bear sightings at Wager Bay between 6 and 10 August 1984.

Ermine

Large numbers of this small weasel inhabit the Wager Bay region (Parks Canada 1978a,b). A track and scat of this species were found at site W13 on the north shore of Wager Bay on 7 August 1984. Ermine were widely distributed on Southampton Island (Sutton and Hamilton 1932).

Ermine range widely over the tundra in search of concentrations of small mammals. They undergo drastic population fluctuations following fluctuations in small mammal abundance, especially that of lemming populations. The Ermine will prey on mammals as large as Arctic Ground Squirrels and juvenile Arctic Hares (Banfield 1974).

Wolverine

The Wolverine is relatively common in the Wager Bay area (Parks Canada 1978a,b) but considered uncommon over most of the surrounding region (Freeman 1976, Bodden 1980). Inuit hunters from Repulse Bay have hunted Wolverines at Wager Bay in the recent past (Dept. of Indian and Northern Affairs 1983a). Two were caught at Repulse Bay by Captain John Murray in 1902 (Sutton and Hamilton 1932). Tracks were observed on Roes Welcome Sound between Wager Inlet and Southampton Island (Degerbol and Freuchen 1935). This solitary wanderer eats a wide range of food items and is primarily a scavenger.

Lynx

The Lynx is primarily a predator in the boreal forests to the south but occasional wanderers reach the tundra regions. There is one extra-limital record for Repulse Bay (Sutton and Hamilton 1932, Freeman 1976). It is not expected that this species will frequent Wager Bay.

In 1918, a Lynx was caught on Coates Island by S.T. Stewart (Soper 1928). One Lynx was seen by several Inuit in 1915 on Southampton Island (Degerbol and Freuchen 1935).

Walrus

The Walrus has not been observed in Wager Bay in the last 50 years although they were once fairly common in the summer (Parks Canada 1977). Hunters killed Walrus in Wager Bay in the early 1900s (Parks Canada 1978a). Walruses are very common on Southampton Island, in Roes Welcome Sound and near Repulse Bay (Loughrey 1959, Mansfield 1963, 1968, Freeman 1976). They are extensively hunted by Inuits in these areas (Mansfield 1959, Loughrey 1959, Smith and Taylor 1977). There is an important hauling out area on the west coast of Roes Welcome Sound just north of the mouth of Wager Bay. This is critical habitat for the Walrus in the area and should be included in any proposed marine park boundary (Loughrey 1959, Parks Canada 1977). Walrus are often found a considerable distance up Roes Welcome Sound in the winter following leads in the pack ice (Loughrey 1959). This gregarious creature feeds mainly on Molluscs.

Bearded Seal

Bearded Seals are fairly common in Wager Bay (Manfield 1963, Parks Canada 1977, Furnell 1981). Bearded Seals were recorded four times in August 1984. On 7 August, one was observed in the water off site W1 and two between sites W13 and W10. On 10 August, four were present along the north shores of the Savage Islands and two were found along the south shores of these islands.

Heard and Donaldson (1981) counted seven during an aerial survey in June 1977 and estimated there were 28 $\pm$ 11 seals in the bay. These seals have been hunted by Inuit from Repulse Bay in the recent past (Dept. of Indian and Northern Affairs 1983a). Bearded Seals probably do not spend the entire winter in Wager Bay because they prefer shorelines that are free of land-fast ice. Large numbers are reported to move into the bay in June when the shorelines become ice-free (Parks Canada 1977).

"The Oogjook is not on the whole abundant in the waters about Southampton Island" (Sutton and Hamilton 1932, p. 45). These solitary animals prefer shallow water where they feed on bottom-dwelling fish and other animals.

Harbour Seal

The Harbour Seal is frequently seen in Ford Lake (Parks Canada 1977, Dept. of Indian and Northern Affairs 1980). This area is reported to support one of the highest concentrations of this species in arctic waters (Parks Canada 1977). Previously, the Harbour Seal population had declined around Southampton Island where they were considered "very rare" by Sutton and Hamilton (1932). Mansfield (1963) did not identify a local population at Wager Bay, possibly an oversight. This seal ranges throughout coastal Hudson Bay from Repulse Bay south and has a strong affinity for fresh water. It often wanders to lakes and up rivers (Mansfield 1967). It overwinters only in ice-free areas. Harbour Seals are gregarious on shore but are solitary hunters which feed nonselectively on available fish species (Banfield 1974). Harbour Seals are much less common than Bearded and Ringed Seals in Wager Bay.

Ringed Seal

This seal is very common in Wager Bay and throughout the Hudson Bay region (Birket-Smith 1933, Mansfield 1963, Freeman 1976, Smith and Taylor 1977). An aerial survey on 20 June 1977 by Heard and Donaldson (1981) gave a minimum estimate of 2,584 $\pm$ 200 Ringed Seals in Wager Bay. Adults overwinter in the bay but most younger seals stay at the edge of the fast ice near the Narrows (Parks Canada 1977). Sutton and Hamilton (1932) considered the Ringed Seal to be "by far the commonest seal to be found in the waters about Southampton Island" (p. 38). This is the most common arctic seal and is important to the economy of the Inuit. Meat is eaten by humans as well as dogs, skins are made into boots and clothing, and oil is used in lamps. It is also very important as a prey species for the Polar Bear.

Harp Seal

The Harp Seal was hunted in Wager Bay in the past but not in this century. It still occurs in Roes Welcome Sound and probably within the bay as well (Parks Canada 1977). Sutton and Hamilton (1932, p. 44) stated that "this is one of the rarer species of seals in the waters around Southampton Island". Bell (1885) considered this the most common seal in all parts of Hudson Bay at all seasons. However, Harp Seal harvests from Repulse Bay, recorded in RCMP game reports of 1962-71, show a total of 18 seals from two recorded years (Smith and Taylor 1977).

This highly gregarious animal migrates in loose herds from breeding grounds in the Gulf of St. Lawrence and Newfoundland-Labrador coast to the Arctic. They remain in the Hudson Bay region from about late June to mid-September (Mansfield 1963, Banfield 1974).

Moose

A skull of a Moose was present at Rankin Inlet in March 1923 but the Inuit did not know what kind of an animal it was (Degerbol and Freuchen 1935). Although Wager Bay has been included within the range of the moose (Banfield 1974), it is not considered a species typical of the arctic-alpine zone (Macpherson 1968) and must be considered hypothetical for Wager Bay.

Barren-ground Caribou

Calving grounds were identified to the north and south of Wager Bay in 1976 (Calef and Heard 1980a) with about 8,000-13,000 caribou in the Wager Bay Herd (north) and 10,000-20,000 in the Lorillard Herd (south) depending on estimate variability and interpretation of the delta (Calef and Heard 1980a, Heard et al. 1981). Estimates were markedly lower in 1977 (Table 12.1, Donaldson 1981) suggesting that more information was needed in caribou inhabiting the area. A survey in 1983 (Heard et al. 1986) did little to clarify the matter because it was conducted in early May, a month before the calving period. An estimated 26,300 caribou occurred between Wager Bay and Chesterfield Inlet and 15,200 between Wager Bay and Committee Bay. However, most of those caribou appearedto be associated with a concentraion of the Melville Herd located north of Repulse Bay. Until information is obtained from tracking radio-collared caribou (now underway) about all that can be stated with certainty is that sometimes upward to about 30,000 caribou may be associated with a herd or herds that calve to the north and south of Wager Bay. These calving grounds are used from mid-May to mid-June (Bliss 1975) and are typically highlands 250 m to 500 m above sea level (Calef and Heard 1980a, Donaldson 1981).

In summer, caribou are particularly abundant along the coastal lowlands on the north shore of Wager Bay (Fig. 12.2). In August 1984, most of the caribou were observed around Douglas Bay and at the downstream lowlands of Piksimanik River (Fig. 12.3). This was also where our camp was located; the apparent distribution of caribou is partly related to the

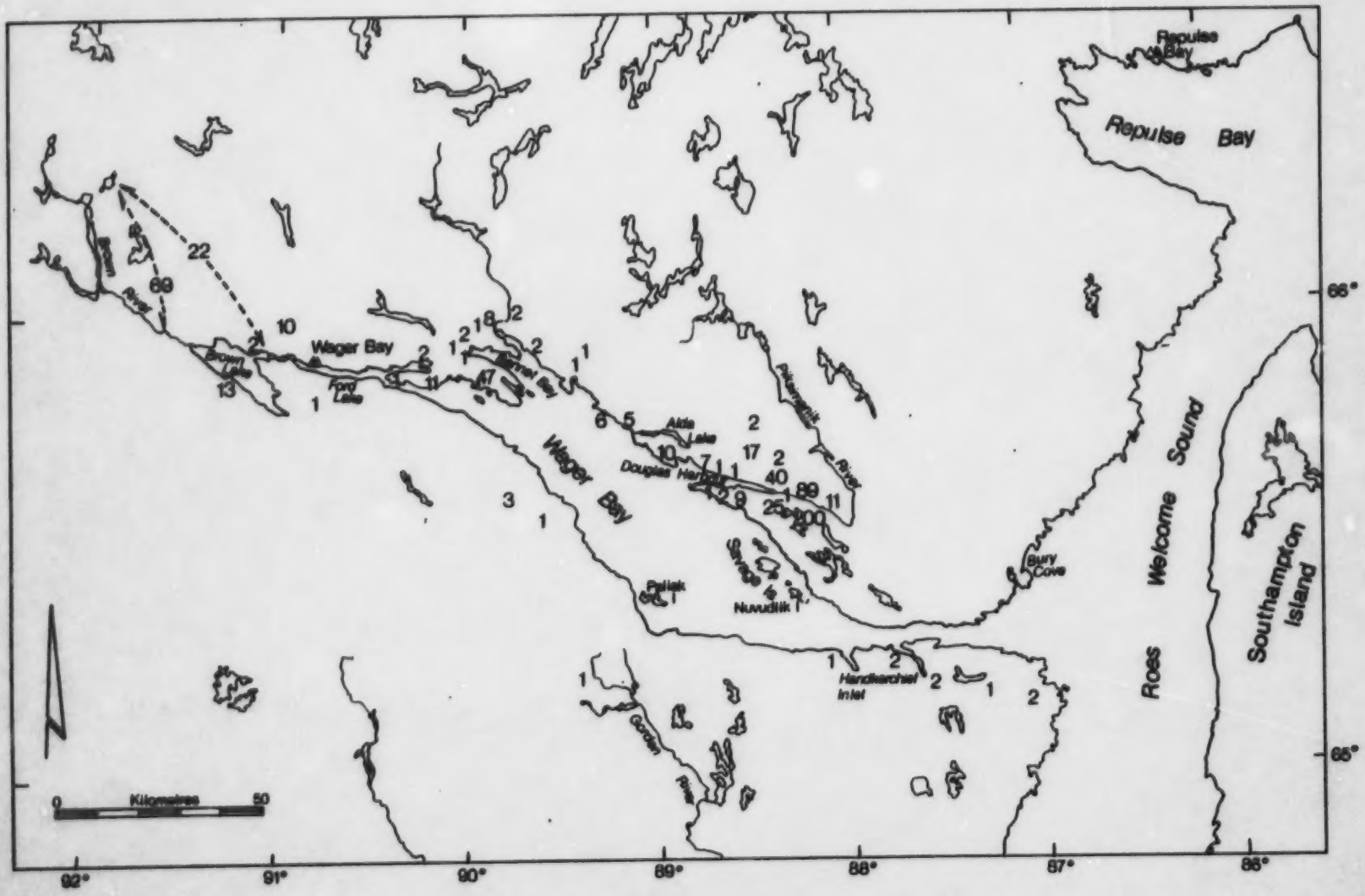

Figure 12.2 Barren-ground Caribou sightings at Wager Bay between 5 and 10 August 1984.

Table 12.1 Estimated number of caribou in Lorillard and Wager herds.

	Estimate ± S.E.	Source
Lorillard Herd		
1976	17,225 ± 3,357	Calef & Heard 1980a
1976	13,780 ± 3,357	Heard et al. 1981
1977	1,400 ± 390	Donaldson 1981
1983	26,300[a]	Heard et al. 1986
Wager Herd		
1976	11,711 ± 1,064	Calef & Heard 1980a
1976	9,369 ± 1,064	Heard et al. 1981
1977	2,900 ± 500	Donaldson 1981
1983	15,200[b]	Heard et al. 1986

[a]Includes Baker Lake and Chesterfield Strata.

[b]May include a large proportion of Melville (Peninsula) herd.

Figure 12.3 Barren-ground Caribou on meadows in the Pikaiwanik River valley.

number of flights in this area. Flights on 7 August found 200 caribou in one herd and 51 in seven other herds suggesting that there was indeed a concentration of caribou in this area. Caribou also appeared to be concentrated at the head of Wager Bay around Brown Lake and north of Brown River. Caribou were not abundant south of Wager Bay and in other areas north of Wager Bay, but our flights were not designed to do an aerial census.

Calef and Heard (1980a) found caribou concentrated within 16 km of the north shore of Wager Bay and few caribou immediately south of the bay, similar to the August 1984 distribution. However, our flights did not cover the calving grounds (which are usually surveyed in June, not August) or survey areas further from the bay where caribou are known to go after breeding (Heard et al. 1981, Donaldson 1981).

The calf to cow ratio was 41 calves to 100 cows based on a count of 103 caribou in nine herds. This was lower than in June 1976 (58:100) (Heard et al. 1981). Early calf mortality could account for the difference. However, the ratio of calves to adult population, which was 15.8%, was lower than 20.2% in August 1977 (Donaldson 1981). Our small sample may indicate a lower production in 1984 than in the two earlier years.

In the spring there is a northwest migration of some caribou in the Wager Bay area. The beginning of southward migration coincides with early blizzards (Banfield 1950). Animals that remain in the area spend summers in the valleys and on grassy plains and winters on the wind-blown hillsides (Kelsall and Loughrey 1955).

Muskox

Muskox were reported to be "found about the head of Wager Inlet west to Baker Lake and thence westward toward Great Slave Lake" (Anthony 1928 in Degerbol and Freuchen 1935). In 1921, two Inuit killed more than 10 Muskoxen in "the interior of Wager Inlet" (Degerbol and Freuchen 1935). This population may have disappeared because of over hunting.

The only recent record is of a single bull along the Brown River in 1977 (Dept. of Indian and Northern Affairs 1983a). The well-vegetated valley that extends along the lower Piksimanik River may be Muskox habitat and is part of the historical range of the species. If a herd was introduced to this area, it would probably do well if not hunted.

13. BIRDS

Relatively few ornithological records are available from Wager Bay. Recent NWT-Wildlife Service sponsored inventories from the bulk of the current information used in this text (Calef and Heard 1980b, Furnell 1981). Consequently we have referred to the larger literature on birds on Southampton Island (Eifrig 1905, Sutton 1932, Degerbol and Freuchen 1935, Manning 1942, Bray 1943, Barry 1962, Parker and Ross 1973, Dupuis 1979, Abraham and Ankney 1986). We have also had to rely on regional and material summaries of bird status (Cooch 1968, Godfrey 1986).

The physical diversity of this area is limited and consequently the diversity of bird species is also limited. The species diversity of the avifauna of the area is comparable to that at Pond Inlet at 72°N, 7° north of Wager Bay (Zoltai et al. 1983). Only 41 species have been recorded at Wager Bay although another 28 are hypothetical for the area. The total of 69 is slightly higher than the 60 species recorded at Pond Inlet. The number of species known or suspected to breed at Wager Bay, 40, is comparable to the 41 at Pond Inlet. The composition of avian orders at Wager Bay is, likewise, comparable to that at Pond Inlet. The following orders represent 88% of bird species at Wager Bay: Charadriiformes 30 species (43%), Anseriformes 12 (17%), Passeriformes 12 (17%), Falconiformes 5 (7%) and Gaviiformes 4 (6%). The respective percentages at Pond Inlet are 48%, 17%, 15%, 5% and 6%.

The biogeographical affinities of proven and suspected breeding species at Pond Inlet were summarized by Renaud et al. (1981). The affinites of the species at Wager Bay has been derived from that reference and, for new species, from Godfrey (1986). Most species (76%) at Wager Bay are circumpolar in distribution (Table 13.1) as they are at Pond Inlet (84%). In addition, most species are panarctic (38%) or low arctic (35%) in North America. The major differences in species affinities between the two areas are the lower number of species of high arctic circumpolar distribution and the higher number of species of low arctic new world distribution at Wager Bay reflecting its more southerly location. Overall species composition is similar between the two sites and 30 (75%) of the species occur at both sites.

Red-throated Loon

The Red-throated Loon is a common and widespread breeder throughout the Wager Bay region. This species was observed at Wager Bay in 1922 (Degerbol and Freuchen 1935). This summer resident frequents freshwater lakes and ponds that are often smaller than those utilized by the other loons (Godfrey 1986). It nests on the shores of ponds and lakes.

Red-throated Loons were not observed during the 1984 fieldwork but were observed in August 1976 (Parks Canada 1977). Red-throated Loons are common breeding birds on Southampton Island (Manning 1942, Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986).

Table 13.1 Summary of the biogeographical affinities of proven and suspected (?) breeding bird species in the Wager Bay area. Cosmopolitan species are listed under their predominant distribution within their arctic range (from Amer. Birds 35:113-129).

Geographic affinity	Panarctic	Low Arctic	High Arctic
Continuously or discontinuously circumpolar	Red-throated Loon Common Eider King Eider Oldsquaw Golden Eagle Gyrfalcon Parasitic Jaeger Long-tailed Jaeger Arctic Tern Black Guillemot Snowy Owl Common Raven Lapland Longspur Snow Bunting	Pacific (Arctic) Loon Yellow-billed Loon Rough-legged Hawk Peregrine Falcon Pintail Willow Ptarmigan Dunlin Northern Phalarope Herring Gull Horned Lark Water Pipit	Rock Ptarmigan Ruddy Turnstone Sanderling Red Phalarope Hoary Redpoll
New World	Snow Goose	Tundra Swan Canada Goose Sandhill Crane Lesser Golden Plover Semipalmated Plover Semipalmated Sandpiper Pectoral Sandpiper	White-rumped Sandpiper Baird's Sandpiper

Arctic Loon

The Arctic Loon is a very common breeder throughout the region and is more common than the Red-throated Loon on Southampton Island (Eifrig 1905, Parker and Ross 1973). This summer resident prefers freshwater lakes and nests on their shores (Godfrey 1986).

Arctic Loons were seen daily between 6 and 10 August 1984 but never more than two were seen at a time. No young were observed. Furnell (1981) saw Arctic Loons between 23 August and 13 September.

Common Loon

Wager Bay is north of the usual range of this species. Two were observed on Southampton Island during August 1971 (Parker and Ross 1973). There are no other records for the immediate vicinity of Wager Bay.

Yellow-billed Loon

This loon was reported from Wager Bay by Cooch (1968). Bray (1943) lists it as occasional on Southampton Island. There is no evidence of breeding in this area although Godfrey (1986) shows Wager Bay within its breeding range. This species inhabits freshwater rivers and lakes and nests along their shores. This species, like the other loons, visits coastal bays and inlets to feed.

Red-necked Grebe

There is only a single record of this species for the region; a specimen was collected from Southampton Island (Bray 1943). This bird does not normally occur in this region (Godfrey 1986).

Northern Fulmar

This species was observed on the east side of Southampton Island during August 1974 (Brown et al. 1975). This is the only record from this region. Wager Bay is not in the normal range of this species (Godfrey 1986).

Tundra Swan

The Tundra Swan was observed in Wager Bay during August 1976 (Parks Canada 1977). There are several historical records for the area as well (Degerbol and Freuchen 1935, Cooch 1968). This species is a very common nester on Southampton Island (Bray 1943, Parker and Ross 1973). It is also common near Repulse Bay (Eifrig 1905). There is no direct evidence of nesting in the Wager Bay area but Godfrey (1986) shows Wager Bay within the breeding range of the species. Notes on the Cape Dobbs ecoregion state that the Tundra Swan likely breeds near the mouth of Wager Bay (Dept. of Indian and Northern Affairs 1983b).

Snow Goose

There are large nesting colonies of this species along the western coast of Hudson Bay and on Southampton Island (Eifrig 1905, Sutton 1932, Manning 1942, Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986). Estimates of the Hudson Bay coastal population range from 1.6 million to 2.1 million (Boyd 1976, Brace et al. 1977). The only records for this species at Wager Bay are from August and September 1978 (Furnell 1981). It is unlikely that the species nests at Wager Bay but, because of the vast numbers in the area, it should be a regular migrant throughout the region.

Ross' Goose

Two adult females were trapped on Southampton Island during the summer of 1953. It is possible that they were breeding in the Snow Goose colony (Cooch 1954). They have been reported nesting at Boas River (Barry and Eisenhart 1958), East Bay, and Southampton Island (Abraham and Ankney 1986). They normally breed at Perry River, 880 km to the northwest (Godfrey 1986). There are no other records for the region. This species could occur in Wager Bay during autumn migration.

Brant

This species has been observed at Wager Bay (Cooch 1968) and likely breeds in the Cape Dobbs ecoregion (Dept. of Indian and Northern Affairs 1983b). Godfrey (1986) shows Wager Bay on the edge of the Brant's breeding range. Brants breed commonly on Southampton Island (Manning 1942, Bray 1943, Barry 1962, Dupuis 1979, Abraham and Ankney 1986). They are probably most common in Wager Bay during migration.

Canada Goose

This species is common at Wager Bay. Most of the birds are large races which breed in southern Canada and arrive as moult migrants. Although there is no direct evidence, a small race called Hutchin's Goose likely nests in the Bay area (Dept. of Indian and Northern Affairs 1983b). This small race is a common nester on Southampton Island (Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986).

Between 5 and 9 August 1984, up to nine flocks were seen each day. The largest flock, 38 geese, was seen on 9 August in the Piksimanik River where more geese were seen than elsewhere. Along the flats of the Gordon River (site W4), there were many wing feathers of Canada Geese indicating that the area had been used by numerous moulting geese. In contrast, there were no signs of geese at sites W3 and W14 which are on the uplands above the river. This species was also observed at Wager Bay between 23 August and 13 September 1978 (Furnell 1981).

Northern Pintail

Pintail were observed during three days in August 1984. No pintail in male plumage were observed, however, all males could be in eclipse plumage at this time of year. Four flocks of females and young were observed as follows: 3 females with 10 young and 1 female with 3 young on 7 August at site W13; 4 females with 5 young and 15 young and females east of site W1 on 10 August. Godfrey (1986) shows Wager Bay to be north of the normal breeding range. There are a few records suggesting breeding on Southampton Island (Manning 1942, Parker and Ross 1973) but no actual nesting records to date (Abraham and Ankney 1986). It is possible that the pintail has extended its range northward in recent years.

Greater Scaup

The only record of this species for the region is a specimen collected on Southampton Island (Sutton 1932). It is not expected to frequent Wager Bay (Godfrey 1986).

Common Eider

The Common Eider is an abundant summer resident of Wager Bay. It is perhaps the most common dabbling duck and nests throughout the Bay (Parks Canada 1977). It is especially abundant around the Savage Islands, a critical nesting habitat for the species. The species also nests on Southampton Island (Manning 1942, Bray 1943). Abraham and Ankney (1986) estimated 3,800 to 5,900 nests in 1980 at East Bay, "one of the largest known concentrations in the Canadian Arctic" (p. 185). Eiders prefer saltwater and some winter on arctic polynyas including Roes Welcome Sound (Prach et al. 1981).

Common Eiders, females and/or eclipse males, were frequently seen between 6 and 10 August 1984. Upon landing at the Savage Islands (site W2) on 6 August, 150 Common Eiders flew off. Broken egg shells were found in four nests at this site. On 7 August, 203 Common Eiders including only two in male plumage were observed in 14 flocks of 1-50 birds between sites W13 and W10, mostly on Bennett Bay. On 10 August, nine flocks with a total of 98 Common Eiders were seen between W1 and the Savage Islands and an additional 101 eiders in eight flocks were seen along the south shore of the Savage Islands. Within these flocks were groups of 3, 4, 5, 7, and 10 Common Eider young. Away from site W1, Savage Islands and Bennett Bay, Common Eiders were less frequently seen and they were never seen on freshwater.

King Eider

The King Eider is a summer resident of Wager Bay (Parks Canada 1977). Many were observed in June 1922 and 1923 (Degerbol and Freuchen 1935). This uncommon species prefers freshwater for nesting but feeds mostly in salt water. It is a common nester on Southampton Island (Manning 1942, Bray 1943, Abraham and Ankney 1986). It is listed as breeding in the Cape Dobbs area (Dept. of Indian and Northern Affairs 1983b). None were seen in August 1984.

Oldsquaw

Oldsquaw is an abundant breeder throughout the Wager Bay region (Degerbol and Freuchen 1935, Cooch 1968, Parks Canada 1977). It is also common in parts of Southampton Island (Bray 1943, Abrahan and Ankney 1986). The species nests beside both saltwater and freshwater.

Flocks of Oldsquaw were seen daily between 5 and 10 August 1984. In the aerial survey between site W13 and W10, 137 Oldsquaw were observed in six flocks of 2-30 birds. Approximately 100 Oldsquaw adults and young were recorded on Savage Islands during the over flight on 9 August 1984. Like Common Eider, Oldsquaw were less common away from Savage Islands and Bennett Bay.

Red-breasted Merganser

This species is occasionally seen as a migrant on Southampton Island (Parker and Ross 1973) and at Wager Bay (Dept. of Indian and Northern Affairs 1983b). Godfrey (1986) shows Wager Bay at the northern edge of this species breeding range.

Bald Eagle

An adult Bald Eagle was observed near Reversing Falls in Wager Bay on 7 August 1984 by S. Zoltai. Kelsall (1951) recorded one at Thelon Game Sanctuary in August 1951. These are the only records for this species in the region. It is unlikely to occur in the Wager Bay area regularly because the bay is well north of this eagle's breeding range (Godfrey 1986).

Rough-legged Hawk

This raptor is a common cliff-nester in the Wager Bay area (Parks Canada 1977, 1978b). A total of 11 occupied nesting sites in 1976 and two in 1977 were found during Wager Bay raptor surveys (Calef and Heard 1980b). In August 1984, two unoccupied nests were found near Douglas Harbour on the north shore of Wager Bay and four observations of birds were recorded: one giving alarm calls at site W9 on 7 August, two single birds on south side of Ford Lake near Reversing Falls on 7 August and one at the head of Bennett Bay on 9 August. The species is numerous at Repulse Bay (Bray 1943) and breeds on Southampton Island (Sutton 1932).

Golden Eagle

Single occupied nesting sites were observed in both 1976 and 1977 during Wager Bay raptor surveys (Calef and Heard 1980b). The only other reference to this species in the region, Snyder (1949), called it rare but regular at Repulse Bay. This cliff nester is rare in the region. Godfrey (1986) does not include Wager Bay in the breeding range of this species.

Peregrine Falcon

Wager Bay has one of the highest breeding densities of this falcon in the Canadian Arctic (Parks Canada 1977). The tundrius subspecies nests on cliffs throughout the region. Fourteen active nests were located in 1976 and 27 were located in 1977 during raptor surveys (Calef and Heard 1980b). Fyfe (1965) called the Peregrine Falcon a common breeder at Wager Bay in 1961. Furnell (1981) also observed this species at Wager Bay. One nest with three young was found on 9 August 1984 and a single falcon was seen on 7 August (Figs. 13.1, 13.2). McCormick et al. (1984) considered Wager Bay a critical nesting site for the tundrius subspecies. It has been recorded occasionally on Southampton Island (Parker and Ross 1973, Abraham and Ankney 1986).

Gyrfalcon

This is another falcon that has very high breeding densities around Wager Bay (Parks Canada 1977). Five active nest sites were located during raptor surveys both in 1976 and 1977 (Calef and Heard 1980b). This species is reported infrequently for Southampton Island (Bray 1943). None were seen during the August 1984 fieldwork. This species is an important resource of the Wager Bay region.

Willow Ptarmigan

Furnell (1981) observed Willow Ptarmigan at Wager Bay while doing fieldwork between 23 August and 13 September 1978. We found a ptarmigan wing, probably of this species, on 6 August on Nuvudik Island. These are the only records for the Bay. Parker and Ross (1973) found this ptarmigan to be a common breeder on the west side of Southampton Island. Sometimes it is common there in winter as well (Bray 1943). Abraham and Ankney (1986) found Willow Ptarmigan to be less common than Rock Ptarmigan at East Bay. Ptarmigans regularly undergo population fluctuations. Wager Bay is within the breeding range of this species (Godfrey 1986).

Rock Ptarmigan

Although there are no records of this species at Wager Bay, the Bay is within the breeding range of the species (Dept. of Indian and Northern Affairs 1983a, Godfrey 1986). Rock Ptarmigan breed on Southampton Island (Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986). Bodden (1980) describes both species of ptarmigan as being of "prime significance" at Wager Bay.

Sandhill Crane

A pair of this species was observed in the Piksimanik River area on 5 and 9 August 1984. A single crane was seen at site W13 on 7 August 1984. There are no other records for Wager Bay although several were heard near Roes Welcome Sound in 1936 (Bray 1943). It is uncommonly seen and rarely breeds on Southampton Island (Bray 1943, Parker and Ross 1973). Wager Bay is within the breeding range of Sandhill Crane (Godfrey 1986).

Figure 13.1 Peregrine Falcon nest site on Brown River.

Figure 13.2 Peregrine Falcon on cliffs on Brown River.

Black-bellied Plover

Some nest along the marshy coasts of Southampton Island (Bray 1943, Abraham and Ankney 1986). There are no records for Wager Bay although it likely occurs there during migration. A specimen was collected from Chesterfield Inlet (Eifrig 1905).

Lesser Golden Plover

Cooch (1968) recorded this species at Wager Bay. It is a common breeder and numerous on migration on Southampton Island (Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986). In the Douglas Harbour ecoregion wildlife notes, this bird is listed as a probable breeder (Dept. of Indian and Northern Affairs 1983b). Wager Bay lies within the known breeding range of the Golden Plover (McCormick et al. 1984, Godfrey 1986). However, none were seen during the trips in August 1976 or August 1984.

Semipalmated Plover

In August 1984, six pairs of this species were observed from both shores of Wager Bay. Some gave alarm calls. This species is likely a common breeder (Dept. of Indian and Northern Affairs 1983b, Godfrey 1986). It is a common breeder on Southampton Island (Parker and Ross 1973, Abraham and Ankney 1986).

Whimbrel

There are no records of Whimbrel from Wager Bay but several from Southampton Island during autumn migration (Bray 1943, Manning 1942, Parker and Ross 1973). Abraham and Ankney (1986) reported flocks of 5-30 and occasionally over 100 in August 1979 and 1980 at East Bay, Southampton Island. This species could be a regular migrant in the Wager Bay area. In the past, it nested on Southampton Island (Eifrig 1905).

Hudsonian Godwit

There are only two records of this species from Southampton Island (Sutton 1932, Abraham and Ankney 1986). It is probably a very rare migrant in the Wager Bay region.

Ruddy Turnstone

This species likely breeds in the Cape Dobbs region (Dept. of Indian and Northern Affairs 1983b) but has not been observed at Wager Bay. The Ruddy Turnstone is a common nester on some parts of Southampton Island (Manning in Bray 1943, Abraham and Ankney 1986). This species may be an uncommon breeder and migrant at Wager Bay. The Bay was included in this species breeding range in Godfrey (1966) but was not included in Godfrey (1986).

Red Knot

There are no records of Red Knot at Wager Bay. Large fall flocks occur on Southampton Island and it is also a rare breeder (Manning 1942, Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986).

Sanderling

The Sanderling likely breeds in the Cape Dobbs ecoregion near the mouth of Wager Bay (Dept. of Indian and Northern Affairs 1983b, Godfrey 1986). The species has been observed frequently at Wager Bay (Cooch 1968). The Sanderling is rare to uncommon on Southampton Island. Sutton (1932) suspected breeding on the west side of this island, and Abraham and Ankney (1986) found one nest at East Bay.

Semipalmated Sandpiper

One observation of four birds was recorded on Nuvudlik Island on 6 August 1984. The Semipalmated Sandpiper is considered of prime significance at Wager Bay (Bodden 1980). It is undoubtedly a common breeder throughout the region (Godfrey 1986). It is an abundant breeder in wet areas on Southampton Island (Bray 1943) but was not found nesting at East Bay in 1979 and 1980 (Abraham and Ankney 1986).

Least Sandpiper

There are no records for Wager Bay but the Least Sandpiper does nest on Southampton Island. It is also a common breeder on the west coast of Hudson Bay as far north as Chesterfield Inlet (McCormick et al. 1984). This species is probably a rare migrant at Wager Bay.

White-rumped Sandpiper

This species is considered of some significance at Wager Bay (Bodden 1980). It probably breeds at Wager Bay (Dept. of Indian and Northern Affairs 1983a,b, Godfrey 1986). It is likely a very common autumn migrant since it is an abundant migrant on Southampton Island (Bray 1943). It also breeds on Southampton Island (Manning 1942, Parker and Ross 1973, Abraham and Ankney 1986).

Baird's Sandpiper

Three observations of this species were recorded near Douglas Harbour and at Site W20 in early August 1984. Four juveniles, barely able to fly, were at Site W1. The breeding range of this species includes the north shore of Wager Bay (Godfrey 1986). Baird's Sandpiper is likely an uncommon summer resident and common migrant at Wager Bay. Several pairs nested on Southampton Island during the summer of 1970 (Parker and Ross 1973) and 1979-1980 (Abraham and Ankney 1986).

Pectoral Sandpiper

The first record of this species for Wager Bay was recorded on 9 August 1984; a single bird gave alarm calls at site W14. Pectoral Sandpipers have bred on Southampton Island (Sutton 1932) but were only seen once at East Bay in 1979-1980 (Abraham and Ankney 1986). Wager Bay is at the northern edge of the known breeding range (McCormick et al. 1984, Godfrey 1986).

Purple Sandpiper

There are no records for Wager Bay. Sutton (1932) thought it probably nested on Southampton Island. Neither Manning (1942), Bray (1943), nor Abraham and Ankney (1986) observed this species there. Parker and Ross (1973) saw one in 1971. Wager Bay is outside the normal range of this species (Godfrey 1986).

Dunlin

This species is an uncommon summer resident of the Wager Bay area (Parks Canada 1977, Bodden 1980). It is an uncommon breeder and common migrant on Southampton Island (Manning 1942, Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986). It is considered of "some significance" at Wager Bay by Bodden (1980). None were seen in August 1984 at Wager Bay.

Buff-breasted Sandpiper

The only record for the region is of two birds observed by Parker and Ross (1973) on 7 August 1970 on Southampton Island. It is possibly a very rare migrant at Wager Bay since Taverner (1934) noted that it migrates along the west coast of Hudson Bay.

Red-necked Phalarope

Bodden (1980) considered the Red-necked Phalarope to be of "prime significance" at Wager Bay. Parks Canada (1977) included this bird in the category of "known to frequent Wager Bay". Sutton (1932) obtained a specimen on Southampton Island, the only record for the Island.

Red Phalarope

This species was observed in June 1923 (Degerbol and Freuchen 1935) and during fieldwork in August 1976 (Parks Canada 1977). It likely breeds in the area (Dept. of Indian and Northern Affairs 1983b, Godfrey 1986). It is an abundant breeder in wet areas of Southampton Island (Manning 1942, Bray 1943, Abraham and Ankney 1986).

Pomarine Jaeger

Sutton (1932) observed one on Southampton Island and Parker and Ross (1973) found them nesting there. There are no records from Wager Bay. They typically breed north and east of Wager Bay (Godfrey 1986).

Parasitic Jaeger

This jaeger is considered of "prime significance" in the Wager Bay area (Bodden 1980). Bray (1943) saw them at every landing along Roes Welcome Sound. They are found over most of the region (Bodden 1980, Godfrey 1986). Parasitic Jaegers were commonly seen at the Snow Goose colonies on Southampton Island and at least four pairs nested nearby (Bray 1943, Abraham and Ankney 1986).

Long-tailed Jaeger

Furnell (1981) observed this species during 1978 fieldwork at Wager Bay. It is considered of "prime significance" at Wager Bay (Bodden 1980). A pair of these northern predators nested near the Snow Goose colony on Southampton Island (Bray 1943, Abraham and Ankney 1986).

Herring Gull

The Herring Gull is an abundant breeder throughout the Wager Bay area (Brown et al. 1975, Parks Canada 1977, Furnell 1981). This gull also nests in the Snow Goose colonies on Southampton Island (Manning 1942, Abraham and Ankney 1986).

The Herring Gull was the most frequently observed bird during the August 1984 fieldwork. They were observed at most sites. On 7 August 1984, 356 were counted on the flight between sites W13 and W9. On 9 August 1984, 104 were seen on a longer flight between sites W19 and W9. Between 50 and 75 were recorded on islands at the Reversing Falls on 7 and 9 August. Nests were recorded as follows: site W1-9 nests, one with downy young; just west of W1-20 nests; site W2-2 nests; north shore at 89°55'W - 20 nests.

Iceland Gull

Iceland or Thayer's Gull was observed in June 1923 (Degerbol and Freuchen 1935) and during 1976 fieldwork at Wager Bay (Parks Canada 1977). Iceland Gull breeds on Southampton Island but not at Wager Bay (Brown et al. 1975). The status of this species in the Wager Bay area is uncertain.

Glaucous Gull

One was observed along the Brown River (site W17) on 9 August 1984. This is the only Wager Bay record. The Glaucous Gull breeds on the north shore of Southampton Island and in the Repulse Bay area (Bray 1943, Brown et al. 1975). Godfrey (1986) does not include Wager Bay in the breeding range of the Glaucous Gull.

Black-legged Kittiwake

Sutton (1932) considered the kittiwake a rare migrant on Southampton Island. This species is not likely to occur in Wager Bay.

Sabine's Gull

There are no Wager Bay records of Sabine's Gull although the species is a common breeder on Southampton Island (Sutton 1932, Manning 1942, Bray 1943, Brown et al. 1975, Abraham and Ankney 1986). Wager Bay is outside of this species known range (Godfrey 1986).

Ivory Gull

This species is unlikely to wander to Wager Bay. Both Sutton (1932) and Manning (in Bray 1943) collected single birds from Southampton Island. There is also an old (1904) specimen from Chesterfield Inlet (Eifrig 1905).

Arctic Tern

This bird is an abundant breeder over much of the region (Bodden 1980). They are common in Wager Bay (Brown et al. 1975, Parks Canada 1977), abundant on small islands in Roes Welcome Sound (Bray 1943, Brown et al. 1975) and common on Southampton Island (Manning 1942, Bray 1943, Abraham and Ankney 1986).

They were observed on two islands (50 and 10 birds) in Roes Welcome Sound south of the inlet to Wager Bay on 9 August 1984.

Thick-billed Murre

They are common off the south coast of Southampton Island (Bray 1943, Brown et al. 1975). There is a large colony on Coates Island. Thick-billed Murre has not been recorded at Wager Bay.

Black Guillemot

This species is abundant at Wager Bay. It nests on many offshore islands. The small islands near Reversing Falls are heavily colonized by Black Guillemots and are considered critical habitat (Parks Canada 1977). Furnell (1981) recorded many observations of this species in Wager Bay. It is common in Roes Welcome Sound and abundant around Southampton Island (Bray 1943, Abraham and Ankney 1986).

Black Guillemots were seen daily over Wager Bay between 6 and 10 August 1984. On 7 August, flocks of 200, 100 and 50 were observed on Aigguyik Islands and on 10 August, 102 were counted in 10 flocks at the Savage Islands. Twenty were recorded on the islands at the Reversing Falls.

Snowy Owl

The Snowy Owl is considered to be of "prime significance" at Wager Bay (Bodden 1980). The population of the region fluctuates with the abundance of lemmings (Godfrey 1986). Snowy Owls were abundant on Southampton Island in 1970 but after a lemming crash none were observed in 1971 (Parker 1974). Two were observed in 1980 at East Bay but did not nest (Abraham and Ankney 1986). One was recorded at Wager Bay in January 1922 (Degerbol and Freuchen 1935).

Eastern Kingbird

Eastern Kingbirds have been reported twice at Southampton Island: one in the summer of 1967 (Jonkel 1970) and one in June 1971 (Ranford 1972). These represent extra-limital records (Godfrey 1986).

Horned Lark

Four observations of this species were recorded at Wager Bay during August 1984 (6 birds at site W1, 1 at W12, 2 at W13 and 1 at W14). These represent the first records for the Bay. There are a few summer resident larks on Southampton Island as well (Manning in Bray 1943, Abraham and Ankney 1986). Horned Lark is believed to breed around Wager Bay (Godfrey 1986).

Tree Swallow

There is one very unusual record of a Tree Swallow at Southampton Island. A specimen was collected outside the normal range of this species (Sutton 1932).

Common Raven

Two ravens were observed at the Reversing Falls on 7 August 1984. Furnell (1981) also made observations of this bird at Wager Bay. There are many cliffs which provide ideal nesting habitat (Dept. of Indian and Northern Affairs 1983a). There are other records for Repulse Bay and Southampton Island (Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986). This is one of the few species that is present throughout the arctic winter.

Northern Wheatear

There are no wheatear records for Wager Bay. It does, however, breed on the northwestern shore of Southampton Island, directly across Roes Welcome Sound from Wager Bay (McCormick et al. 1984, Godfrey 1986). It has also been observed on the Boothia Peninsula although no breeding records have been noted. It is possible that this species is a rare visitor to the Wager Bay area.

Water Pipit

Water Pipits are most common on dry Precambrian outcrops where they find suitable nesting sites (Bodden 1980). Water Pipits were observed at sites W9 (3 birds), W12 (4 birds), W13 (2 birds), and W18 (1 bird) along the north coast of Wager Bay in August 1984. On Southampton Island, the species is an uncommon summer resident and a common migrant (Manning in Bray 1943). It is considered to have "some significance" at Wager Bay (Bodden 1980).

Dark-eyed Junco

An exhausted specimen was found at Repulse Bay (Sutton 1932). This is far from the normal range of the species (Godfrey 1986).

Savannah Sparrow

There are no records of Savannah Sparrow at Wager Bay. However, the species breeds north of Chesterfield Inlet, is a casual visitor to Southampton Island and has been recorded on several high arctic islands (Godfrey 1986). Consequently it is considered hypothetical at Wager Bay.

Lapland Longspur

This species is abundant throughout the region and is considered to be of "prime significance" at Wager Bay (Bodden 1980). While doing fieldwork at Wager Bay, Furnell (1981) saw many of these birds. The species is also numerous on Southampton Island (Manning 1942, Bray 1943, Parker and Ross 1973, Abraham and Ankney 1986). They are present from May to September.

Flocks of up to six birds were observed at sites W1, W6, W7, W11, W12, W13, W15, W16, W18, W19, and W20 on 7 and 9 August 1984. A juvenile was present at site W1 on 6 August 1984.

Smith's Longspur

A single Smith's Longspur was observed on 7 August 1984 to the north of Bennett Bay (site W11). The species is not likely to occur here frequently because it is far from its normal range (Godfrey 1986). Kelsall (1951) saw it on two occasions in the Thelon Game Sanctuary.

Snow Bunting

This common species is considered to be of "some significance" at Wager Bay (Bodden 1980). Furnell (1981) and Degerbol and Freuchen (1935) reported Snow Buntings at Wager Bay. Bray (1943) found it numerous in rocky localities on Southampton Island and Abraham and Ankney (1986) reported three nests at East Bay in 1980. They are present in the area from April until September.

Single and paired Snow Buntings were recorded at sites W1, W3, W14, and W20 between 6 and 9 August 1984.

Hoary Redpoll

The Hoary Redpoll is classed as having "some significance" at Wager Bay (Bodden 1980). Furnell (1981) and our party failed to observe this uncommon species. It may be more common during autumn migration and winter. On Southampton Island, the Hoary Redpoll is an uncommon summer resident and common migrant (Sutton 1932). There is no evidence of breeding.

14. FISHES

As an arctic location, Wager Bay has a relatively rich fish fauna. This is because Wager Bay is on the mainland rather than on an island, it is located far enough south to have some fish species that do not occur farther north and it has marine, freshwater, and estuarine habitats. The diversity of fish species at Wager Bay is also affected by an east-west gradient (more freshwater species are found in the west of the continent than in the east) and by distance from an ocean (Bodden 1980).

Knowledge of the fish resources of Wager Bay is probably more limited than that of any other resource of the Bay. Very little is known about the marine fish that inhabit the Bay but marine species found in Hudson Bay (Hunter 1968) will probably also be found in Wager Bay. Parks Canada conducted a preliminary resource inventory of the intertidal and subtidal zones of Wager Bay in August 1976 (Parks Canada 1977) and only one fish, the staghorn sculpin, was recorded in the Bay. In August 1984, no sampling for fish was carried out and no fish were observed but the pilot for the fieldcrew caught an arctic grayling in the Brown River on 9 August 1984 and the fieldcrew enjoyed some arctic char that had been caught by local Inuit. Due to the lack of information about fish at Wager Bay, much of the following discussion is based upon literature dealing with areas near Wager Bay. An analysis of resources, including freshwater fish resources, was carried out for Parks Canada in the central tundra region (Bodden 1980). Fisheries surveys were included in environmental work that was done for the proposed Polar Gas Pipeline development (McLeod et al. 1976).

Arctic Char

The arctic char is the most northern of the freshwater fishes. It has a circumpolar distribution including northern Europe, Asia and North America (Slastenenko 1958) and is abundant in the coastal zones of northern Canada. There are populations confined to freshwater as well as anadromous populations that spend the winter in lakes and the summer in saltwater bays. Spawning occurs in late summer or fall and young hatch in spring. Fish including capelin, sculpin and cod constitute the bulk of the diet but a variety of invertebrates is also eaten.

Char "constitute the major proportion of the fishery resources of the Wager Bay region" (Parks Canada 1977). Exceptionally high populations of char occur in most of the rivers on the north shore of Wager Bay from Bennett Bay to the Pikoimanik River and in the Brown River. Substantial spawning populations concentrate in the Brown and Pikoimanik rivers. Earlier in the summer, char are dispersed throughout the Bay. Char is considered of prime significance in Natural Region 16 (central tundra) because of its widespread distribution, its extensive use as food for both humans and dogs and its commercial potential (Bodden 1980). Natives travel to Wager Bay each year to fish for char, lake whitefish, and lake trout (Parks Canada 1978a). McLeod et al. (1976) collected char at numerous locations in the Baker Lake area.

Lake Trout

Lake trout are found from Alaska and central British Columbia, east to northern New England and Labrador (Slastenenko 1958). Spawning occurs in late August and September and eggs hatch in spring. Smaller trout feed on invertebrates while adults feed on deep-water fish. Trout overwinter in deep lakes and in major rivers. In summer, they may remain in the same areas or move to nearby rivers and lakes.

Natives make annual visits to Wager Bay to fish for lake trout as well as whitefish and arctic char (Parks Canada 1978a). In Natural Region 16, this fish is "probably the most abundant and widely distributed fish species" (Bodden 1980). It was considered of prime significance in the Region because of its abundance, distribution and potential for commercial and sport fisheries. It was considered of some significance in the Wager Bay area. In the Baker Lake area, lake trout are found in virtually all lakes of sufficient depth to provide overwintering habitat (McLeod et al. 1976).

Lake Whitefish

Lake whitefish are widely distributed throughout Canada. This species can be found from Alaska and central British Columbia east to Labrador and New Brunswick (Slastenenko 1958). They inhabit mainly lakes and spawning occurs there in the fall. This whitefish is a bottom feeder; it eats mainly benthic invertebrates such as chironomids and snails.

Whitefish as well as lake trout and arctic char are the reason that natives come annually to Wager Bay to fish (Parks Canada 1978a). This species is reported to occur in the surface waters of Wager Bay (Parks Canada 1977). Lake whitefish is considered to be of some significance in Natural Region 16 because of its extensive distribution in the south and west of the Region, because it is consumed locally by humans and dogs and because it is a commercial species (Bodden 1980). This species comprised 10% of the catch in nets in the Baker Lake area (McLeod et al. 1976).

Lake Cisco

The lake cisco occurs from Alberta east to Quebec and north into the Northwest Territories (Slastenenko 1958). It inhabits cooler temperate and suberctic lakes. Spawning occurs in fall, eggs mature through the winter, and young emerge in spring. This species feeds on copepods, mysids, and insects. In turn, it is a significant prey source for predatory fish such as lake trout.

No references to the occurrence of the lake cisco in the Wager Bay area were found. This species was considered to be of some significance in Natural Region 16 because of its occurrence "throughout the southern portion of the Region", its ecological significance as a prey species and its significance in the native fishery (Bodden 1980). Lake cisco was probably the most numerous species in Baker Lake and was "collected from virtually all netting sites" in sampling at Baker Lake (McLeod et al. 1976).

Round Whitefish

The round whitefish occurs in Asia and North America (Slastenenko 1958). In North America, the range reaches from Alaska and northern British Columbia east to New England and north to the Northwest Territories. It inhabits shallow water in lakes and streams. Spawning occurs in fall. The main food items are copepods and bottom-dwelling invertebrates (McLeod et al. 1976).

No references were found that refer to the round whitefish in Wager Bay. McLeod et al. (1976) described it as being less common than lake whitefish in the Baker Lake area. This species was also described as being of some significance in Natural Region 16 due to its distribution and abundance in the Region (Bodden 1980). Although the round whitefish is common and widespread in northern waters, numbers are not sufficient to warrant a commercial fishery.

Other Salmonids

Four additional salmonid species occur in Natural Region 16 (Bodden 1980). These species, arctic cisco, blackfin cisco, least cisco, and broad whitefish, were generally considered to be rare in the Region and would therefore not be expected to be significant resources in the Wager Bay area. The blackfin cisco, however, was considered to be of some significance in the Region because of its rarity in the Region and its occurrence "in only a dozen or so other locations in Canada".

Arctic Grayling

The arctic grayling occurs in mainland lakes and rivers from northern British Columbia and the prairie provinces to the Yukon and Northwest Territories (McLeod et al. 1976). It is also found in the western Soviet Union (Slastenenko 1958). Grayling spawn in streams in spring. Insects make up the bulk of the diet.

No references to grayling at Wager Bay were found. This species was considered of some significance in Natural Region 16 because of its distribution and abundance in the Region (Bodden 1980). Grayling are scarce in Baker Lake (McLeod et al. 1976).

Capelin

Capelin occur in boreal-arctic seas and in the North Atlantic. In Canada, it occurs in the Coronation Gulf and James, Hudson, and Ungava bays and south to the Gulf of St. Lawrence (Leim and Scott 1966). It also occurs around Greenland, Iceland, and northern Norway. Spawning takes place in saltwater in June or July. Smaller capelin eat copepods while larger fish eat amphipods, euphasiids, decapods, shrimp, and fish eggs. This fish is one of the favoured foods of the harp seal.

Capelin have been reported in the surface waters of Wager Bay (Parks Canada 1977) and in Ford Lake (Dept. of Indian and Northern Affairs 1983a). McLeod et al. (1976) and Bodden (1980) discuss freshwater fish species occurring in Baker Lake and Natural Region 16 respectively and do not refer to capelin.

Northern Pike

Pike occur in freshwater in the northern parts of Europe, Asia and North America. In North America, they range from Labrador and New England west to northern British Columbia and Alaska. Fish including small pike constitute the bulk of the diet but a variety of foods including insects, leeches, frogs, mice, and small ducks may also be eaten (Slastenenko 1958).

Although not reported from Wager Bay, northern pike are "found throughout the south and west part of Natural Region 16" where they are considered of some significance to the Region (Bodden 1980).

Longnose Sucker

The longnose sucker occurs from Labrador, northern Hudson Bay, and Alaska south to New England, the Mississippi River drainage, and British Columbia (Slastenenko 1958). Spawning occurs in streams in spring. Foods include aquatic insects and benthic crustaceans and worms.

Suckers may occur in the Wager Bay area but this has yet to be confirmed. This species is considered to be of some significance in Natural Region 16 where it is commonly found throughout the south and west of the Region (Bodden 1980). McLeod et al. (1976) netted a few suckers in Baker Lake and concluded that the Lake was "probably the approximate limit to their northeastern distribution in the Keewatin District".

Lake Chub

Lake chub occur throughout Canada from the Atlantic Provinces to British Columbia and north to the Yukon and Northwest Territories (Slastenenko 1958). They inhabit rivers and small creeks as well as lakes. Spawning occurs in summer. Foods include aquatic insects, crustaceans, and algae.

No references to lake chub were found in the literature on Wager Bay. Small numbers of chub occur in the southwest corner of Natural Region 16 (Bodden 1980).

Arctic Cod

The arctic cod occurs in saltwater and has a circumpolar distribution. It occurs as far south as the northwestern Gulf of St. Lawrence in eastern North America and occurs farther north than any other fish species (Leim and Scott 1966). Spawning is thought to take place in late winter or early spring. Foods include amphipods and mysids.

Arctic cod are a significant food resource. Although not eaten by humans, they are heavily fed upon by ringed seals, are a major food item for beluga and narwhal in summer and are sometimes eaten by bearded seals. High densities of young cod may be found in the upper 150 m of water; these fish are exploited by birds such as fulmars, kittiwakes, murres, and guillemots. Arctic cod have been reported in the surface waters of Wager Bay (Parks Canada 1977).

Burbot

The burbot occurs in fresh and brackish waters throughout Europe, northern Asia and northern North America. In Canada, it occurs from Labrador and the Maritimes west to British Columbia and north to the Yukon and Northwest Territories (Slastenenko 1958). Spawning takes place in winter in rivers or lakes with rocky bottoms. Small fish, crustaceans and insect larvae are the main food sources.

No references to the occurrence of the burbot in the Wager Bay area were found. This fish occurs throughout much of Natural Region 16 but in small numbers (Bodden 1980). McLeod et al. (1976) reported netting two fish of this species in Baker Lake and concluded that the Lake represented "the approximate limit of their distribution".

Trout-perch

The trout-perch occurs in Canada from the Yukon, British Columbia, and the Mackenzie River drainage east to Hudson Bay and the Great Lakes (Slastenenko 1958). Spawning takes place in rocky, fast-flowing streams during spring or summer. Foods include small insects and crustaceans.

No records of the trout-perch in the Wager Bay area were found. This species is known in Natural Region 16 only from the southeast corner (Bodden 1980).

Slimy Sculpin

The slimy sculpin occurs in eastern Siberia and in North America from Alaska and British Columbia east to the Great Lakes and north to the Yukon and Northwest Territories (Slastenenko 1958). This species occurs widely in northern Canada. It inhabits lakes and cool, rocky creeks and spawns in spring. Foods include aquatic insects, crustaceans, small fish, and aquatic vegetation.

This species has not yet been recorded in the Wager Bay area. It is found throughout much of Natural Region 16 where it is considered to be of some significance (Bodden 1980). Slimy sculpins in Baker Lake are preyed upon by many fish and are seasonally important in the diet of the lake trout (McLeod et al. 1976).

Spoonhead Sculpin

The spoonhead sculpin occurs from British Columbia east to the Great Lakes and Hudson Bay and north to the Yukon and Northwest Territories (Slastenenko 1958). It inhabits deep water of lakes and large rivers. Spawning occurs in spring. This species feeds on plankton and aquatic insects.

Spoonhead sculpins have not yet been recorded in Wager Bay. They are found in Natural Region 16 only in the southwest (Bodden 1980).

Arctic Sculpin

The arctic sculpin occurs in arctic and subarctic seas from Greenland south to the Strait of Belle Isle and west along the Canadian Arctic coast to Union and Dolphin Strait (Leim and Scott 1966). It is also found in Hudson and James bays. This species probably occurs in Wager Bay as it has been recorded nearby in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a).

Shorthorn Sculpin

The shorthorn sculpin occurs in arctic seas and in the North Atlantic. It is found around Siberia, northern Europe, Greenland, and North America from Alaska to Hudson Bay and south to New York (Leim and Scott 1966). Spawning takes place in late winter or early spring. Foods eaten by this sculpin include crabs, shrimp, sea urchins, worms, and organic material.

This fish has been recorded in Ford Lake and in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a).

Fourhorn Sculpin

The fourhorn, or deepwater, sculpin is circumpolar in distribution and occurs as either a marine or freshwater form (Scott and Crossman 1973). In North America, the freshwater form occurs from western Quebec and the Great Lakes through Manitoba and Saskatchewan and north across the Northwest Territories to Great Bear Lake and Victoria Island. Breeding occurs in summer or early fall. Foods eaten by this species include chironomids, mysids, and copepods. This sculpin is also a significant food source for lake trout and burbot.

The fourhorn sculpin is not presently known from the Wager Bay area. The freshwater form is considered of some significance in Natural Region 16 because of its limited distribution in the Region (Somerset Island) and because of its limited distribution in North America. McLeod et al. (1976) reported the marine form of this species from Baker Lake. The marine form tends to be common throughout its normal range.

Staghorn Sculpin

The staghorn sculpin occurs in cold waters of the Arctic Ocean and the North Atlantic south to northern Norway along European shores and south to the Gulf of St. Lawrence along the Canadian coast (Leim and Scott 1966).

This species was the only species observed during field studies conducted at Wager Bay in 1976 (Parks Canada 1977). Seven to nine specimens were observed on 6 August near Nuvudlik Island, three or four specimens were observed on 7 August near the Paliak Islands and six to eight specimens were observed on 9 August in Ford Lake.

Twohorn Sculpin

The twohorn sculpin occurs in northern Europe, Iceland, Greenland, Hudson Bay, and the northwestern Canadian Arctic (Leim and Scott 1966). It has been recorded in Ford Lake in the Wager Bay area (Dept. of Indian and Northern Affairs 1983a).

Ribbed Sculpin

The ribbed sculpin is thought to occur in Canada from Dolphin and Union Strait, N.W.T. to Hudson Bay and south to the Gulf of St. Lawrence and around Greenland, Iceland and the Atlantic coast of Europe (Leim and Scott 1966). The range is uncertain because of frequent confusion with the mailed sculpin (Triglops murrayi). Spawning occurs in late summer or early fall.

This sculpin has been recorded in Ford Lake and near Wager Bay in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a).

Atlantic Spiny Lumpsucker

The Atlantic spiny lumpsucker occurs throughout the Canadian Arctic including Hudson Bay, along the coast of Labrador and occasionally as far south as Maine. It also occurs across the North Atlantic to Iceland and Spitzbergen (Leim and Scott 1966). This species has been recorded in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a) and is probably found in the Wager Bay area as well.

Greenland Seasnail

The range of the Greenland seasnail includes Ungava Bay, Greenland, Labrador, and the mouth of the St. Lawrence River (Leim and Scott 1966). This species may also occur in the Wager Bay area as it has been recorded nearby in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a).

Fourline Snakeblenny

The fourline snakeblenny is known in Canada from the Labrador coast, Hudson Bay, Ungava Bay and Victoria Island. It also occurs along west Greenland, in the Beaufort Sea, Bering Sea, and Sea of Okhotsk (Leim and Scott 1966). This fish has been recorded in Ford Lake in the Wager Bay area (Dept. of Indian and Northern Affairs 1983a).

Arctic Shanny

The arctic shanny occurs in Hudson Bay, along the Atlantic coast of North America from Labrador to Maine and from the Bering Sea across northern Siberia to Japan (Leim and Scott 1966). This species has been recorded in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a) and probably also occurs in the Wager Bay area.

Daubed Shanny

The daubed shanny is found in the Arctic in the Bering Sea, from Labrador to Cape Cod, around Greenland and across the North Atlantic to Iceland and Scandinavia (Leim and Scott 1966). This species has been recorded in Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983c) and may also occur in the Wager Bay area.

Ninespine Stickleback

The ninespine stickleback is widely distributed in fresh, brackish and salt waters of the northern hemisphere (Slastenenko 1958). It inhabits cool, quiet waters usually near shore. Spawning takes place in spring. Foods include small aquatic insects and crustaceans.

This species was described as being of prime significance in the Wager Bay area and in Natural Region 16 (Bodden 1980). This level of significance was based upon the widespread occurrence of the species throughout the Region, its potential as a prey species for other fish species and its use as food by humans and dogs. McLeod et al. (1976) concluded that this species was probably widespread throughout the Baker Lake area.

Threespine Stickleback

Threespine sticklebacks occur in fresh, brackish, and salt waters of the northern hemisphere (Slastenenko 1958). Spawning takes place from April to September. The diet consists of small insects, crustaceans, algae, and fish eggs.

This species has not yet been recorded in the Wager Bay area. It does occur in the southeast corner of Natural Region 16 (Bodden 1980).

15. LAND USE

This section is taken from Gamble (1984), the only reference that was found on native harvest in the Wager Bay area. This study documented native harvest from Repulse Bay to Eskimo Point from October 1981 to September 1983. Since there is no permanent settlement at Wager Bay the report does not identify the harvest in our study area. Repulse Bay is about 160 km by air from Wager Bay, Chesterfield Inlet is about 240 km to the south and Baker Lake is about 320 km to the southwest. Hunters from these communities are most likely to harvest wildlife from Wager Bay. The harvest of caribou by these hunters includes animals from the Wager Bay herd which reinforces this assumption but does not prove that they were harvested in our study area.

The harvest of caribou from the Wager Bay herd is greater by hunters from Repulse Bay than Baker Lake (Table 15.1). Chesterfield Inlet hunters harvested caribou north of the community but no herd affiliation was given to the harvest. It is assumed here that the harvest is from the Wager Bay herd. Reported harvest from Baker Lake increased in the second half of the study consequently more Wager Bay caribou may have been harvested than indicated in Table 15.1.

The Wager Bay herd is obviously very important to the communities of Chesterfield Inlet and Repulse Bay, but less so to Baker Lake. The herd is the source of about 200 000 kg of fresh meat with a retail replacement value of $2 million. The caribou is also a highly desirable species to the Inuit thus the Wager Bay herd has high economic and cultural importance to these three communities.

Other wildlife is harvested at Wager Bay; ringed seal and arctic char were taken during our field visit. There was sign of harvest of eider on the Savage Islands and arctic char at Ford Lake.

Gamble (1984) indicates a more diverse harvest than we noted in our brief visit (Table 15.2). The communities of Baker Lake and Chesterfield Inlet are less likely to visit the Bay; thus only Repulse Bay harvest is shown. Obviously only a portion of the harvest would be from Wager Bay. Summer hunting parties travel by boat from Repulse Bay to Wager Bay to hunt. Also, abandoned snow machines at Savage Island indicate that winter hunting parties visit the area (Fig. 15.1).

Table 15.1 The reported and estimated harvest of Wager Bay caribou by hunters from three communities from October 1981 to September 1983 (from Gamble 1984).

Community	Reported harvest	Estimated harvest (E.H.)	E.H./Total
Baker Lake	1262	1321	15%
Chesterfield Inlet	495	665	87%
Repulse Bay	1218	2192	99%
Total	2975	4178	36%

Table 15.2 The reported and estimated harvest for Repulse Bay hunters from October 1981 to September 1983 expressed as number of animals (from Gamble 1984, Table 12).

Species	Reported harvest	Estimated harvest
Caribou		
Kaminuriak	2	5
Beverly	8	12
Wager Bay	1218	2192
TOTAL	1228	2209
Polar Bear	22	35
Grizzly Bear	2	5
Black Bear	1	1
Arctic Fox	124	181
Red Fox	1	1
Wolf	36	60
Wolverine	3	3
Arctic Hare	17	27
Ringed Seal	607	1157
Bearded Seal	20	36
Harp Seal	1	3
Seal spp.	628	1196
Walrus	20	34
Beluga	40	79
Narwhal	7	15
Canada Goose	1	2
Snow Goose	9	27
Ross' Goose	10	18
Goose spp.	20	47
Eider	18	34
Guillemot	3	9
Ptarmigan	100	255
Other fowl	5	7
Char	1674	2989
Lake Trout	754	1464
Grayling	6	13

Figure 15.1 Inuit hunting camp on Savage Islands.

16. ECONOMIC AND OTHER CLAIMS

16.1 Native Land Claims

In February 1976, the Inuit Tapirisat of Canada (ITC) presented a comprehensive claim proposal to the federal government on behalf of the Inuit in the NWT (Inuit Tapirisat of Canada 1976). The area of concern, which the Inuit called "Nunavut" includes essentially all lands in the NWT north of the treeline. Although often termed a land claim, it was apparent that the Inuit also seek a degree of political autonomy. The main points of their claim regarding this area are:

1) Nunavut Territory to have powers roughly equivalent to powers of existing NWT government with additional responsibilities regarding land-use planning and land-use control,

2) Nunavut to acquire provincial-type powers over a 15-year transition period,

3) Federal government to make a commitment to creation of Nunavut either before or as part of a "land claims" settlement. ITC is determined not to enter into a land claims settlement without assurances of political change and

4) Questions of local and regional government within Nunavut to be left up to the new Nunavut government.

In the late 1970s, Parks Canada held a series of information meetings on proposals to establish national wilderness parks within the land claim area. Shortly thereafter, the ITC Board of Directors passed a motion rejecting all national parks until a land claim has been settled (Inuit Tapirisat of Canada 1980). Their position has softened somewhat since that time. In 1983, the Tungavik Federation of Nunavut (TFN) initialed an Agreement-in-Principle providing for the establishment of a minimum of three National Parks within their claim area. Ayuittuq National Park Reserve was apparently not included in the above total (B. Gamble pers. comm.). As only one Park Reserve has been established (in addition to Ayuittuq), it is likely that this area could be established as a park if so desired by Parks Canada.

16.2 Mineral Claims

As of 7 October 1986, there were no prospecting permits issued or mineral claims staked within the study area (E.J. Macleod, Indian and Northern Affairs, Canada [INAC], pers. comm.).

16.3 Oil and Gas Exploration Permits

No oil or gas exploration permits have been issued within or near the study area (D. O'Rourke, Canadian Oil and Gas Lands Administration [COGLA], pers. comm.).

16.4 Federal Reservations

There are no federal reservations within the study area (D. Proulx, INAC, pers. comm.).

16.5 International Biological Programme

There are no proposed IBP sites within or near the study area.

16.6 Land-Use Permits and Leases

The following land-use permits are presently active within the study area (reference numbers refer to INAC files, Figure 16.1).

85N314 - Geological Survey of Canada (GSC) has a base camp and four fly camps which support its geological and mineral assessment study of the Wager Bay area. The camps (tents only) are operated for eight weeks each summer. The present land-use permit expires in June 1987 but the files indicate that GSC will probably request a one-year extension.

N85J376 - GNWT Renewable Resources maintains a field camp at Douglas Harbour which supports their caribou and polar bear field studies. The camp consists of one pre-fab cabin and two wall tents erected when required. The present land-use permit expires on 30 September 1987.

A.U14-1L (Tour) Sila Lodge - an application to lease approximately 10 ha of land near Bennett Bay was submitted to INAC on 3 September 1986. The proponent plans to build a 20-bed tourist lodge on this site and promote naturalist tours throughout the Wager Bay area. Financial support for this project has been committed by both the federal (Special Agricultural and Rural Development [ARDA]) and territorial (Economic Development and Tourism) governments.

A.U14-2L (Tour) Sila Lodge - an application for a land lease for an associated air strip (100' x 3000') has also been submitted.

16.7 Private Lands

There are no private lands registered within the study area (D. Proulx, INAC, pers. comm.).

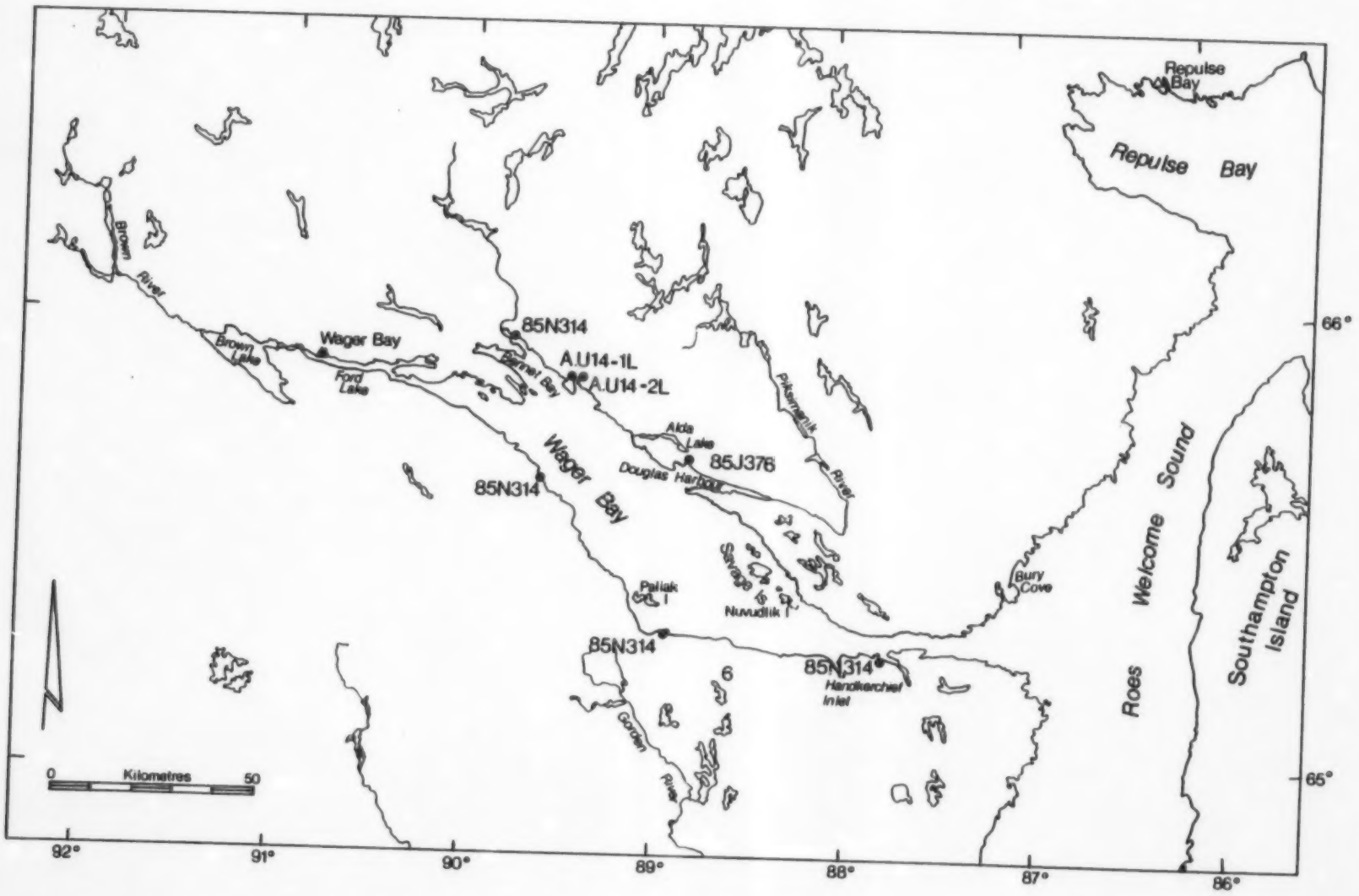

Figure 16.1 Location of economic and other claims at Wager Bay. Numbers refer permits and leases in the text.

17. HUMAN HISTORY

It is believed that the Wager Bay area may have been colonized as early as 2000 B.C. by the Denbigh people who came from Alaska. These people lead nomadic lifestyles following the movement of animals (Parks Canada 1977).

The next inhabitants of the region were the Dorset culture. Although there is no evidence suggesting these people inhabited Wager Bay, archaeological sites have been located in the Repulse Bay area, Southampton Island and the mouth of Chesterfield Inlet. Since the Dorset people were also nomadic hunters, they may have hunted in Wager Bay (Parks Canada 1977).

The Thule culture colonized the area from 1260 to 1750. A number of archaeological sites have been discovered along the western coast of Hudson Bay and Southampton Island (Fig. 17.1).

The next group of people that inhabited the Bay was the Aivilingmiut. These people lived there on a seasonal basis (Mathiassen 1976). In late winter and early spring, these people travelled to the Bay and lived on the ice in snow houses (Inuit Land Occupancy Report Vol. I). During this period they hunted primarily seal and walrus for food. In the summer and fall they fished, collected eggs, and hunted caribou and muskox that roamed the adjacent tundra (Linnamae 1979). Linnamae also cites records that describe Wager Bay as being the "centre of Aivilik life and not just a marginal area."

In 1742, a European named Captain Chistopher Middle, accompanied by Captain Moor, explored Wager Bay in search of the Northwest Passage. Middleton named the bay Wager Inlet after Honourable Sir Charles Wager. This may have been the first contact between the indigenous people and Europeans.

In 1746, Henry Ellis explored the area around Roes Welcome Sound but did not locate the opening to Wager Inlet. It was proposed that they explored another bay to the north known as Repulse Bay (Barrow 1971).

An expedition was carried out by Captain Smith in the California and Captain Moor in the Door in 1747. Together they explored Wager Inlet (Birket-Smith 1933). Captain Moor sent a party to explore beyond Wager Bay into Ford Lake and found that Wager Inlet was not a part of the Northwest Passage (Linnamae 1979).

From 1747 to 1860 this area was untravelled by Europeans. In 1860 new interest was developed in this area. A large scale whaling operation was conducted throughout Hudson Bay until 1915 (Linnamae 1979). It is unknown if these whaling ships ever entered the bay but they extensively hunted Hudson Bay including Roes Welcome Sound.

During this whaling period Schwather, in 1879, explored the extent of Wager Bay during a land expedition while in search of Franklin (Birket-Smith 1933).

The next European influence in the area was the establishment of a Hudson Bay Company Post on Ford Lake in 1925 (Fig. 17.2). (At this time Ford Lake was known as Lake Tessyonyuk.) For years the Hudson Bay Company tried to reduce the cost and hazards to ships when travelling in the arctic and thus an investigation into the feasibility of an overland route was initiated. An experimental tractor train was tested in 1929. This train consisted of a Holt 2-ton tractor pulling sleds. The train travelled from Wager Inlet to Cockburn Bay (Brown 1936). Although the tractor train made several successful trips, the costs proved to be too high to be economical. A mission that was established on Puvidlik Island is now abandoned and used as a seasonal hunting camp (Fig. 15.1).

Since the time of the tractor train to present day, Wager Bay has had little human influence except for the occasional scientific field investigations (Heywood 1967 in Linnamae 1979). Recently the NWT Wildlife Service and the Freshwater Institute in Winnipeg have been conducting studies in the area.

In summary, Linnamae (1979) noted that the Wager Bay area was inhabited by "20th century Euro-Canadians, 19th and 20th century Aivilingmiut, 19th century whalers, proto-historic Inuit and Thule." There is also evidence suggesting that Arctic Small Tool cultures may have colonized Wager Bay. Due to the lack of archaeological work that has been done in the area, literature regarding both prehistoric and historic archaeology remains sparse.

Figure 17.1 Inuit campsites, likely from Thule culture.

Figure 17.2 Hudson's Bay Company post at Ford Lake.

18. SUMMARY AND RECOMMENDATIONS

The Wager Bay area contains some interesting physiographic and faunal features. Rugged scenery is prevalent in parts of the area and the presence of a large polynya results in high marine mammal concentration. The presence of a constant polar bear population is both an attraction and deterrent.

The general conclusion of the authors is that whilst the individual features of the area are not unique, the area displays a degree of uniqueness that may qualify it for a national park.

18.1 Representativeness of the Area

The area appears to be entirely representative of the Wager Plateau. It does not have a wide range of variations in geology, rivers, or periglacial features. Its unique feature is related to conflicting tidal movement in and out of Wager Bay which results in an ice-free area at the mouth of the bay, attracting a number of marine mammals.

18.1.1 Summary of Outstanding Abiotic Features

The scenery of the highly dissected terrain in the Ford Lake area is impressive. The deep fiord at the site of Wager Bay is spectacular. The reversing rapids between Wager Bay and Ford Lake are rather unique: rapids cascade into Wager Bay at low tide, but the water flow is reversed at high tide, as water pours into Ford Lake from the bay.

18.2 Summary of Biotic Features

In winter, marine mammals concentrate at the open water at the tidal polynya at the mouth of Wager Bay and the reversing rapids at the outlet of Ford Lake.

Marine mammals are dispersed in summer and no concentrations are obvious. Caribou and polar bear are widespread around the bay. Birds are numerous in shoreline areas but few spectacular numbers were observed.

18.3 Recommended Boundary

After considering the resources of the area, the following boundaries are recommended for the park: eastern boundary is Hudson Bay. Northern boundary originates on Hudson Bay, proceeding due west along Lat. 65°30' until the watershed divide of Piksimanik River is reached. The boundary follows the divide around Wager Bay and Brown Lake until Lat. 65°00' is reached; a line due east from here to Hudson Bay would form the southern boundary.

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Appendix 1. Bryophytes from the Wager Bay region, Northwest Territories.

HEPATICAE

PSEUDOLEPICOLEACEAE

Blepharostoma trichophyllum (L.) Dum.

PTILIDIACEAE

Ptilidium ciliare (L.) Hampe

CEPHALOZIACEAE

Cephalozia bicuspidata (L.) Dum.

Cephalozia pleniceps (Aust.) Lindb.

CEPHALOZIELLACEAE

Cephaloziella arctica Bryhn & Douin.

JUNGERMANNIACEAE

Chandonanthus setiformis (Ehrh.) Lindb.

Anastrophyllum minutum (Schreb.) Schust.

Gymnocolea inflata (Huds.) Dum.

GYMNOMITRIACEAE

Marsupella revoluta (Nees) Dum.

Gymnomitrion concinnatum (Lightf.) Corda

Gymnomitrion corallioides Nees

SCAPANIACEAE

Scapania irrigua (Nees) Gott.

MARCHANTIACEAE

Marchantia polymorpha L.

Appendix 1. Continued

MUSCI

SPHAGNACEAE

Sphagnum aongstroemii C. Hartm.

Sphagnum arcticum Flatb. & Frisv.

Sphagnum balticum (Russ.) Russ. ex C. Jens.

Sphagnum compactum DC. ex Lam. & DC.

Sphagnum fimbriatum Wils. ex Hook.

Sphagnum imbricatum Hornsch. ex Russ.

Sphagnum lenense H. Lindb. ex Pohle

Sphagnum lindbergii Schimp. ex Lindb.

Sphagnum orientale Sav.-Ljub.

Sphagnum rubellum Wils.

Sphagnum russowii Warnst.

Sphagnum squarrosum Crome

Sphagnum teres (Schimp.) Ångstr. ex C. Hartm.

ANDREAEACEAE

Andreaea rupestris Hedw.

DITRICHACEAE

Ditrichum flexicaule (Schwaegr.) Hampe

Ceratodon purpureus (Hedw.) Brid.

SELIGERIACEAE

Blindia acuta (Hedw.) B.S.G.

Appendix 1. Continued

DICRANACEAE

Dicranella subulata (Hedw.) Schimp.

Cnestrum alpestre (Wahlenb.) Nyh. = Cynodontium alpestre

Cynodontium strumiferum (Hedw.) Lindb.

Oncophorus wahlenbergii Brid.

Dicranum angustum Lindb.

Dicranum elongatum Schleich. ex Schwaegr.

Dicranum fuscescens Turn.

POTTIACEAE

Anoectangium sendtnerianum B.S.G.

Tortella tortuosa (Hedw.) Limpr.

Tortula ruralis (Hedw.) Gaertn., Meyer, & Scherb.

GRIMMIACEAE

Schistidium agassizii Sull. & Lesq. = Grimmia agassizii

Schistidium alpicola (Hedw.) Limpr. = Grimmia alpicola

Schistidium apocarpum (Hedw.) B.S.G. = Grimmia apocarpa

Schistidium gracile (Ruhl.) Limpr. = Grimmia apocarpa var. stricta

Grimmia affinis Hoppe & Hornsch. ex Hornsch.

Grimmia torquata Hornsch. ex Grev.

Rhacomitrium canescens (Hedw.) Brid.

Rhacomitrium lanuginosum (Hedw.) Brid.

SPLACHNACEAE

Tetraplodón mnioides (Hedw.) B.S.G.

Appendix 1. Continued

Tetraplodon paradoxus (R.Br.) Hag.

Aplodon wormskjoldii (Hornem.) R.Br.

Splachnum sphaericum Hedw.

Splachnum vasculosum Hedw.

BRYACEAE

Pohlia cruda (Hedw.) Lindb.

Pohlia nutans (Hedw.) Lindb.

Bryum argenteum Hedw.

Bryum cryophilum Mårt.

Bryum knowltonii Barnes

Bryum pseudotriquetrum (Hedw.) Gaertn., Meyer, & Scherb.

Bryum stenotrichum C. Müll.

Bryum tortifolium Funck. ex Brid. = B. cyclophyllum

Bryum weigelii Spreng.

MNIACEAE

Plagiomnium ellipticum (Brid.) Kop. = Mnium ellipticum

Cinclidium latifolium Lindb.

Cinclidium stygium Sw.

Cinclidium subrotundum Lindb.

AULACOMNIACEAE

Aulacomnium palustre (Hedw.) Schwaegr.

Aulacomnium turgidum (Wahlenb.) Schwaegr.

Appendix 1. Continued

MEESIACEAE

Meesia triquetra (Richt.) Ångstr.

Meesia uliginosa Hedw.

CATOSCOPIACEAE

Catoscopium nigritum (Hedw.) Brid.

BARTRAMIACEAE

Bartramia pomiformis Hedw.

Conostomum tetragonum (Hedw.) Lindb.

Philonotis fontana (Hedw.) Brid.

ORTHOTRICHACEAE

Orthotrichum anomalum Hedw.

Ulota crispa (Hedw.) Brid.

AMBLYSTEGIACEAE

Campylium stellatum (Hedw.) C. Jens.

Drepanocladus aduncus (Hedw.) Warnst.

Drepanocladus revolvens (Sw.) Warnst.

Hygrohypnum polare (Lindb.) Loeske

Calliergon giganteum (Schimp.) Kindb.

Calliergon obtusifolium Karcz.

Calliergon richardsonii (Mitt.) Kindb. ex Warnst.

Calliergon sarmentosum (Wahlenb.) Kindb.

Calliergon stramineum (Brid.) Kindb.

Calliergon trifarium (Web. & Mohr) Kindb.

Appendix 1. Continued

Scorpidium scorpioides (Hedw.) Limpr.

PLAGIOTHECIACEAE

Plagiothecium denticulatum (Hedw.) B.S.G.

HYLOCOMIACEAE

Hylocomium splendens (Hedw.) B.S.G.

POLYTRICHACEAE

Pogonatum dentatum (Brid.) Brid.

Polytrichum commune Hedw.

Polytrichum juniperinum Hedw.

Polytrichum piliferum Hedw.

Polytrichum strictum Brid.

Appendix 2. Lichens from the Wager Bay region, Northwest Territories.

COLLEMATACEAE

Arctomia delicatula Th. Fr.

PANNARIACEAE

Psoroma hypnorum (Vahl) S. Gray.

PELTIGERACEAE

Nephroma arcticum (L.) Torss.

Nephroma expallidum (Nyl.) Nyl.

Peltigera aphthosa (L.) Willd.

Peltigera aphthosa var. leucophlebia Nyl.

Peltigera canina var. rufescens (Weis.) Mudd.

Peltigera malacea (Ach.) Funck.

Peltigera polydactyla (Neck.) Hoffm.

Peltigera scabrosa Th. Fr.

Solorina crocea (L.) Ach.

STICTACEAE

Lobaria linita (Ach.) Rabenh.

CLADONIACEAE

Cladonia amaurocraea (Flörke) Schaer.

Cladonia bellidiflora (Ach.) Schaer.

Cladonia chlorophaea (Flörke) Spreng.

Cladonia coccifera (L.) Willd.

Cladonia fimbriata (L.) Fr.

Cladonia gracilis (L.) Willd.

Appendix 2. Continued

Cladonia mitis Sandst.

Cladonia phyllophora Hoffm.

Cladonia pocillum (Ach.) O. Rich.

Cladonia rangiferina (L.) Wigg.

Cladonia stricta (Nyl.) Nyl.

Cladonia stellaris (Opiz) Pouz. & Vezda

Cladonia subfurcata (Nyl.) Arn.

Cladonia uncialis (L.) Wigg.

LECIDEACEAE

Huilia flavocaerulescens (Hornem) Hertel

Huilia glaucophaea (Körb.) Hertel

Huilia macrocarpa (DC.) Hertel

Lecidea armeniaca (DC. in Lam. & DC.) Fr.

Lecidea atrobrunnea (Ram. ex Lam. & DC.) Schaer.

Lecidea auriculata Th. Fr.

Lecidea berengeriana (Mass.) Nyl.

Lecidea cuprea Somm.

Lecidea lulensis Hellb.

Lecidea pilati (Hepp) Körb.

Lecidea plana Lahm. ex Körb.

Lecidea tornoensis Nyl.

Lecidea cf. vernalis (L.) Ach.

Lecidea vorticosa (Flörke) Körb.

Appendix 2. Continued

Lopadium pezizoideum (Ach.) Körb.

Mycoblastus sanguinarius (L.) Norm.

Psora rubiformis (Ach.) Hook.

Rhizocarpon atroalbescens (Nyl.) Zahlbr.

Rhizocarpon copelandii (Körb.) Th. Fr.

Rhizocarpon effiguratum (Anzi) Th. Fr.

Rhizocarpon eupetraeoides (Nyl.) Blomb & Fors.

Rhizocarpon eupetraeum (Nyl.) Arn.

Rhizocarpon geographicum (L.) DC.

Rhizocarpon grande (Flörke) Arn.

Rhizocarpon melanopthalma (Ram.) Leuckert

Rhizocarpon riparium Räs.

Rhizocarpon rittokense (Hellb.) Th. Fr.

Rhizocarpon superficiale (Schaer.) Vain.

STEREOCAULACEAE

Stereocaulon arenarium (Sav.) Lamb

Stereocaulon botryosum Ach.

Stereocaulon coniophyllum Lamb

Stereocaulon paschale (L.) Hoffm.

Stereocaulon rivulorum Magn.

UMBILICARIACEAE

Umbilicaria cylindrica (L.) Del.

Umbilicaria hyperborea (Ach.) Hoffm.

Appendix 2. Continued

Umbilicaria proboscidea (L.) Schrad.

Umbilicaria vellea (L.) Ach.

PERTUSARIACEAE

Pertusaria coriacea (Th. Fr.) Th. Fr.

Pertusaria dactylina (Ach.) Nyl.

Pertusaria oculata (Dicks.) Th. Fr.

Pertusaria panyrga (Ach.) Mass.

Pertusaria subobducens Nyl.

ACAROSPORACEAE

Acarospora sinopica (Wahlenb.) Körb.

LECANORACEAE

Aspicilia cinerea (L.) Körb.

Aspicilia sublapponica Zahlbr.

Candelariella arctica (Körb.) Santess.

Candelariella athallina (Wedd.) DR.

Candelariella coralliza (Nyl.) Magn.

Candelariella terrigena Räs.

Haematomma lapponicum Räs.

Icmadophila ericetorum (L.) Zahlbr.

Lecanora epibryon (Ach.) Ach.

Lecanora intricata (Schrad.) Ach.

Lecanora kariana Räs.

Lecanora piniperda Körb.

Appendix 2. Continued

Lecanora polytropa (Ehrh.) Rabenh.

Ochrolechia androgyna (Hoff.) Arn.

Ochrolechia frigida (Sw.) Lynge

Ochrolechia gonatodes (Ach.) Räs.

Ochrolechia inaequatula (Nyl.) Zahlbr.

Ochrolechia tartarea (L.) Mass.

PARMELIACEAE

Asahinea chrysantha (Tuck.) W. & C. Culb.

Asahinea scholanderi (Llano) W. & C. Culb.

Cetraria andrejevii Oksn.

Cetraria commixta (Nyl.) Th. Fr.

Cetraria cucullata (Bell) Ach.

Cetraria delisei (Bory) Th. Fr.

Cetraria ericetorum Opiz

Cetraria hepatizon (Ach.) Vain.

Cetraria islandica (L.) Ach.

Cetraria nigricans (Retz.) Nyl.

Cetraria nivalis (L.) Ach.

Hypogymnia subobscura (Vain.) Poelt.

Parmelia almquistii Vain.

Parmelia alpicola Th. Fr.

Parmelia fraudans Nyl.

Parmelia omphalodes (L.) Ach.

Appendix 2. Continued

Parmelia panniformis (Nyl.) Vain. = Melanelia panniformis (Nyl.) Essl.

Parmelia saxatilis (L.) Ach.

Parmelia stygia (L.) Ach. = Melanelia stygia (L.) Essl.

Platismatia glauca (L.) Culb. & Culb.

Xanthoparmelia centrifuga (L.) Hale

Xanthoparmelia incurva (Pers.) Hale

Xanthoparmelia separata (Th. Fr.) Hale

USNEACEAE

Alectoria nigricans (Ach.) Nyl.

Alectoria ochroleuca (Hoffm.) Mass.

Bryoria chalybeiformis (L.) Brodo & Hawksw.

Bryoria nitidula (Vain.) Brodo & Hawksw.

Cornicularia divergens (Ach.) Ach.

Dactylina arctica (Hook.) Nyl.

Dactylina madreporiformis (Wulf.) Tuck.

Pseudephebe minuscula (Nyl.) Brodo & Hawksw.

Pseudephebe pubescens (L.) Choisy

Siphula ceratites (Wahlenb.) Fr.

Thamnolia subuliformis (Ehrh.) W. Culb.

PHYSCIACEAE

Buellia nivalis (Bagl. & Carest) Hertel & Hafellner

Buellia spuria (Schaer.) Anzi

Physcia caesia (Hoffm.) Hampe

Appendix 2. Continued

Physconia muscigena (Ach.) Poelt

Rinodina turfacea (Wahlenb.) Körb.

TELOSCHISTACEAE

Caloplaca cinnamomea (Th. Fr.) Oliv.

Caloplaca tiroliensis Zahlbr.

Fulgensia bracteata (Hoffm.) Räs.

Xanthoria candelaria (L.) Th. Fr.

Xanthoria elegans (Link.) Th. Fr.

SPHAEROPHORACEAE

Sphaerophorus fragilis (L.) Pers.

Sphaerophorus globosus (Huds.) Vain.

FUNGI IMPERFECTI

Lepraria neglecta (Nyl.) Lett.

Appendix 3. Vascular plants from the Wager Bay region, Northwest Territories.

POLYPODIACEAE

Cystopteris fragilis (L.) Bernh.

Dryopteris fragrans (L.) Schott.

EQUISETACEAE

Equisetum scirpoides Michx.

LYCOPODIACEAE

Lycopodium selago L.

GRAMINEAE

Arctagrostis latifolia (R.Br.) Griseb.

Calamagrostis neglecta (Ehrh.) Gaertn., Mey. & Scherb.

Dupontia fisheri R.Br. ssp. *psilosantha* (Rupr.) Hultén

Elymus arenarius L. ssp. *mollis* (Trin.) Hultén

Festuca brachyphylla Schultes

Hierochloë alpina (Sw.) R. & S.

Phippsia algida (Sol.) R. Br.

Pleuropogon sabinei R. Br.

Poa alpigena (Fr.) Lindm.

Poa arctica R. Br.

Poa glauca M. Vahl

Puccinellia langeana (Berl.) Th. Sor.

Puccinellia phryganodes (Trin.) Scribn. & Merr.

Trisetum spicatum (L.) Richt. var. *maidenii* Fern.

Appendix 3. Continued

CYPERACEAE

Carex aquatilis Wahlenb. var. stans (Drej.) Boott

Carex bicolor All.

Carex bigelowii Torr.

Carex capillaris L.

Carex chordorrhiza L.f.

Carex glareosa Wahlenb. var. amphigena Fern.

Carex maritima Gunn.

Carex membranacea Hook.

Carex misandra R. Br.

Carex nardina Fr. var. atriceps Kük.

Carex norvegica Retz.

Carex rariflora (Wahlenb.) Sm.

Carex scirpoidea Michx.

Carex vaginata Tausch

Eleocharis acicularis (L.) R. & S.

Eriophorum angustifolium Honck.

Eriophorum callitrix Cham.

Eriophorum russeolum Fr. var. albidum Nyl.

Eriophorum scheuchzeri Hoppe

Kobresia simpliciuscula (Wahlenb.) Mack.

Scirpus caespitosus L. ssp. austriacus (Pallas) Asch. & Graeb.

Appendix 3. Continued

JUNCACEAE

Juncus albescens (Lange) Fern.

Juncus biglumis L.

Juncus castaneus Smith

Luzula confusa Lindebl.

Luzula wahlenbergii Rupr.

LILIACEAE

Tofieldia coccinea Richards.

Tofieldia pusilla (Michx.) Pers.

SALICACEAE

Salix alaxensis (Anderss.) Cov.

Salix arctica Pall.

Salix fuscescens Anderss.

Salix glauca L.

Salix herbacea L.

Salix reticulata L.

BETULACEAE

Betula glandulosa Michx.

POLYGONACEAE

Koenigia islandica L.

Oxyria digyna (L.) Hill

Polygonum viviparum L.

Appendix 3. Continued

CARYOPHYLLACEAE

Cerastium alpinum L.

Honckenya peploides (L.) Ehrh. var. diffusa (Hornem.) Mattf.

Melandrium apetalum (L.) Fenzl ssp. arcticum (Fr.) Hult.

Minuartia rubella (Wahlenb.) Hiern.

Sagina caespitosa (J. Vahl) Lge.

Silene acaulis L.

Stellaria crassipes Hult.

Stellaria laeta Richards.

Stellaria longipes Goldie

Stellaria monantha Hult.

RANUNCULACEAE

Ranunculus hyperboreus Rottb.

Ranunculus pedatifidus Sm. var. leiocarpus (Trautv.) Fern.

Ranunculus pygmaeus Wahlenb.

PAPAVERACEAE

Papaver radicatum Rottb.

CRUCIFERAE

Cardamine bellidifolia L.

Cochlearia officinalis L.

Draba glabella Pursh

Draba lactea Adams

Draba nivalis Liljebl.

Appendix 3. Continued

Eutrema edwardsii R. Br.

SAXIFRAGACEAE

Saxifraga caespitosa L.

Saxifraga cernua L.

Saxifraga foliolosa R. Br.

Saxifraga hirculus L.

Saxifraga nivalis L.

Saxifraga oppositifolia L.

Saxifraga rivularis L.

Saxifraga tricuspidata Rottb.

ROSACEAE

Dryas integrifolia M. Vahl

Potentilla hyparctica Malte var. elatior (Abrom.) Fern.

Potentilla palustris (L.) Scop.

Potentilla vahliana Lehm.

LEGUMINOSAE

Astragalus alpinus L.

Oxytropis maydelliana Trautv.

EMPETRACEAE

Empetrum nigrum L. spp. hermaphroditum (Lge.) Böcher

ONAGRACEAE

Epilobium latifolium L.

Appendix 3. Continued

HALORAGACEAE

Hippuris vulgaris L.

PYROLACEAE

Pyrola grandiflora Radius

ERICACEAE

Andromeda polifolia L.

Arctostaphylos alpina (L.) Spreng.

Cassiope tetragona (L.) D. Don

Ledum decumbens (Ait.) Lodd.

Rhododendron lapponicum (L.) Wahlenb.

Vaccinium uliginosum L. var. alpinum Bigel.

Vaccinium vitis-idaea L. var. minus Lodd.

DIAPENSIACEAE

Diapensia lapponica L.

PLUMBAGINACEAE

Armeria maritima (Mill.) Willd. ssp. labradorica (Wallr.) Hult.

BORAGINACEAE

Mertensia maritima (L.) S.F. Gray

SCROPHULARIACEAE

Pedicularis labradorica Wirsing

Pedicularis sudetica Willd.

CAMPANULACEAE

Campanula uniflora L.

Appendix 3. Continued

COMPOSITAE

Antennaria angustata Greene

Antennaria canescens (Lge.) Malte

Artemisia borealis Pall.

Chrysanthemum integrifolium Richards.

Erigeron humilis Grah.

Taraxacum lacerum Greene

Appendix 4. Provisional checklist of the mammals of the Wager Bay area.

This appendix summarizes information on the abundance of mammals in the area. The assignment of common (C), uncommon (U) and rare (R) status must be considered subjective. Hypothetical (H) is used to designate a species which is expected to occur but has not been collected or seen at Wager Bay.

There are no population estimates except for caribou on which to make an assessment of status. Also, the cyclic population fluctuations of species such as Arctic Hare and Brown Collared Lemming have been ignored.

The sources of information used in this checklist are Banfield (1974) = B, Sutton and Hamilton (1932) = S & H, Degerbol and Freuchen (1935) = D & F, Furnell (1981) = F and the present study = 1984. For each species, 'P' indicates that the species was reported by the authors in their study area.

Appendix 4. Continued

Species	Sources of Information B	S & H	D & F	F	1984	Status
INSECTIVORA						
Barren-ground Shrew *Sorex ugyunak*	P	P				H
LAGOMORPHA						
Arctic Hare *Lepus arcticus*	P	P		P		C
RODENTIA						
Arctic Ground Squirrel *Spermophilus parryi*	P	P	P	P	P	C
Northern Red-backed Vole *Clethrionomys rutilus*	P					H
Brown Lemming *Lemmus sibiricus*	P	P				H
Collared Lemming *Dicrostonyx torquatus*	P					H
CETACEA						
White Whale *Delphinapterus leucas*	P			P		U
Narwhale *Monodon monoceros*		P				R
DELPHINIDAE						
Bowhead Whale *Balaena mysticetus*	P	P				H
CARNIVORA						
Wolf *Canis lupus*	P	P	P	P	P	C

Appendix 4. Continued

Species	Sources of Information B	S & H	D & F	F	1984	Status
Arctic Fox *Alopex lagopus*	P	P		P	S	U
Red Fox *Vulpes vulpes*	P	P				H
Grizzly Bear *Ursus arctos*						H
Polar Bear *Ursus maritimus*	P	P	P	P	P	C
Ermine *Mustela erminea*	P	P			S	H
Wolverine *Gulo gulo*	P	P	P			H
Lynx *Lynx lynx*		P	P			H
PINNIPEDIA						
Walrus *Odobenus rosmarus*	P					H
Bearded Seal *Erignathus barbatus*	P	P		P	P	C
Harbour Seal *Phoca vitulina*	P	P				U
Ringed Seal *Phoca hispida*	P	P				U
Harp Seal *Phoca groenlandicus*	P	P				U
ARTIODACTYLA						
Moose *Alces alces*	P		P			H

Appendix 4. Continued

Species	Sources of Information B	S & H	D & F	F	1984	Status
Caribou *Rangifer tarandus*			P	P	P	C
Muskox *Ovibos moschatus*			P			R

Appendix 5. Provisional checklist of the birds of Wager Bay.

This checklist includes all species of birds that have been recorded at Wager Bay or that might be expected to occur there based on their occurrence at Southampton Island or on published range maps. The following sources were used: Parks Canada (1980) = P.C.; Bray (1943), Sutton (1932) and Abraham and Ankney (1986) for Southampton Island = S.I.; Godfrey (1986) = B of C (Birds of Canada); Allen and Hottenstein 1983 = N.G. (National Geographic Guide to North American Birds); and our data from August 1984 = 84.

The status of a species was determined subjectively based on the few records that are available. "P" indicates that a species has been recorded at a location. The abundance was identified as common (C), uncommon (U) or rare (R). Species that are common will be seen many times per year. Uncommon species are likely to be recorded up to 25 times per year if an observer was at Wager Bay for an extended period. A rare species is likely to be seen five or fewer times per year. Species that are expected to occur at Wager Bay based on range maps or records nearby, are listed as hypothetical (H). Where eggs or young have been observed the species is designated "B" or known breeder. Where a species can be expected to breed it is designated "b".

Appendix 5. Continued

Species	Sources of Information P.C.	S.I.	B of C	N.G.	84	Status
GAVIIFORMES						
Red-throated Loon *Gavia stellata*	P	B	B	B		C-b
Pacific (Arctic) Loon *Gavia pacifica*	P	B	B	B	P	C-b
Common Loon *Gavia immer*		P				R
Yellow-billed Loon *Gavia adamsii*	P	P	B	B		R-b
PODICIPEDIFORMES						
Red-necked Grebe *Podiceps grisegena*		P				R
PROCELLARIFORMES						
Northern Fulmar *Fulmarus glacialis*		A				H
ANSERIFORMES						
Tundra Swan *Cygnus columbianus*	P	B	B	B		U-b
Greater White-fronted Goose *Anser albifrons*			H			H
Snow Goose *Chen caerulescens*		B	B			U-b
Ross' Goose *Chen rossii*		B				H
Brant *Branta bernicla*	P	B	B	B		U

Appendix 5. Continued

Species	Sources of Information P.C.	S.I.	B of C	N.G.	84	Status
Canada Goose *Branta canadensis*	P	B	B	B	P	C-b
Northern Pintail *Anas acuta*		P	B		B	U-B
Greater Scaup *Aythya marila*		A				H
Common Eider *Somateria mollissima*	P	B	B	B	B	C-B
King Eider *Somateria spectabilis*	P	B	B	B		U-b
Oldsquaw *Clangula hyemalis*	P	B	B	B	B	C-B
Red-breasted Merganser *Mergus serrator*		P	B			H
FALCONIFORMES						
Bald Eagle *Haliaeetus leucocephalus*					P	R
Rough-legged Hawk *Buteo lagopus*	P	B	B	B	b	C-B
Golden Eagle *Aquila chrysaetos*		P	B			R-B
Peregrine Falcon *Falco peregrinus*	P	P	B	B	B	C-B
Gyrfalcon *Falco rusticolus*	P	P	B	B		U-B

Appendix 5. Continued

Species	Sources of Information P.C.	S.I.	B of C	N.G.	84	Status
GALLIFORMES						
Willow Ptarmigan *Lagopus lagopus*		B	B	B	P	R-b
Rock Ptarmigan *Lagopus mutus*		B	B	B		H-b
GRUIFORMES						
Sandhill Crane *Grus canadensis*		B	B		P	R-b
CHARADRIIFORMES						
Black-bellied Plover *Pluvialis squatarola*		B				H
Lesser Golden Plover *Pluvialis dominica*	P	B	B	B		H-b
Semipalmated Plover *Charadrius semipalmatus*	P	B	B	B	b	C-b
Whimbrel *Numenius phaeopus*		P				H
Hudsonian Godwit *Limosa haemastica*		P				H
Ruddy Turnstone *Arenaria interpres*		B				H-b
Red Knot *Calidris canutus*		B				H
Sanderling *Calidris alba*	P	B		B		U-b
Semipalmated Sandpiper *Calidris pusilla*	P	B	B	B	P	U-b

Appendix 5. Continued

Species	Sources of Information P.C.	S.I.	B of C	N.G.	84	Status
Least Sandpiper *Calidris minutilla*		B				H
White-rumped Sandpiper *Calidris fuscicollis*	E	B	B	B		H-b
Baird's Sandpiper *Calidris bairdii*	E	B	B	B	B	U-B
Pectoral Sandpiper *Calidris melanotos*		B			b	R-b
Purple Sandpiper *Calidris maritima*		B				H
Dunlin *Calidris alpina*	P	B	B	B		U-b
Buff-breasted Sandpiper *Tryngites subruficollis*		A				H
Red-necked Phalarope *Phalaropus lobatus*	P	B	B	B		U-b
Red Phalarope *Phalaropus fulicaria*	P	B	B	B		U-b
Pomarine Jaeger *Stercorarius pomarinus*	P	B	B			H
Parasitic Jaeger *Stercorarius parasiticus*		B		B		H-b
Long-tailed Jaeger *Stercorarius longicaudus*	P	B	B	B		R-b
Herring Gull *Larus argentatus*	P	B	B	B	B	C-B
Iceland (Thayer's) Gull *Larus glaucoides thayeri*	P	B				U
Glaucous Gull *Larus hyperboreus*		B			P	R

Appendix 5. Continued

Species	Sources of Information P.C.	S.I.	B of C	N.G.	84	Status
Black-legged Kittiwake *Rissa tridactyla*		P				H
Sabine's Gull *Xema sabina*		B				H
Ivory Gull *Pagophila eburnea*		A				H
Arctic Tern *Sterna paradisaea*	P	B		B	P	C-B
Thick-billed Murre *Uria lomvia*		P				H
Black Guillemot *Cepphus grylle*	P	B	B	B	P	C-B
STRIGIFORMES						
Snowy Owl *Nyctea scandiaca*	P	B	B	B		U-b
PASSERIFORMES						
Eastern Kingbird *Tyrannus tyrannus*		A				H
Horned Lark *Eremophila alpestris*		B	B	B	P	U-b
Tree Swallow *Tachycineta bicolor*		P				H
Common Raven *Corvus corax*		P	B	B	P	U-b
Northern Wheatear *Oenanthe oenanthe*		B				H
Water Pipit *Anthus spinoletta*		B	B	B	P	U-b

Appendix 5. Continued

Species	Sources of Information P.C.	S.I.	B of C	N.G.	84	Status
Dark-eyed Junco *Junco hyemalis*		P				H
Savannah Sparrow *Passerculus sandwichensis*		P				H
Lapland Longspur *Calcarius lapponicus*		B	B	B	b	C-b
Smith's Longspur *Calcarius pictus*					P	R
Snow Bunting *Plectrophenax nivalis*	P	B	B	B	P	C-b
Hoary Redpoll *Carduelis hornemanni*		P	B	B		H-b

Appendix 6. Common and scientific names of fish known to occur or potentially occurring in the Wager Bay area. Potential residents are species recorded in Natural Region 16 (Bodden 1980) or Roes Welcome Sound (Dept. of Indian and Northern Affairs 1983a).

SALMONIDAE		
	Salvelinus alpinus	arctic char
	Salvelinus namaycush	lake trout
	Coregonus clupeaformis	lake whitefish
	Coregonus artedii	lake cisco
	Coregonus vasus	broad whitefish
	Coregonus autumnalis	arctic cisco
	Coregonus nigripinnis	blackfin cisco
	Coregonus sardinella	least cisco
	Prosopium cylindraceum	round whitefish
THYMALLIDAE		
	Thymallus arcticus	arctic grayling
OSMERIDAE		
	Mallotus villosus	capelin
ESOCIDAE		
	Esox lucius	northern pike
CATOSTOMIDAE		
	Catostomus catostomus	longnose sucker
CYPRINIDAE		
	Couesius plumbeus	lake chub
GADIDAE		
	Boreogadus saida	arctic cod
	Lota lota	burbot
PERCOPSIDAE		
	Percopsis omiscomaycus	trout-perch

MAPS
NOT
FILMED

CARTES
OMISES